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OF NUMISMATICS

11



Second Series

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## THE LIVIA HOARD OF PSEUDO-PHILIP TETRADRACHMS

(PLATES 1-3)

RICHARD G. McALEE

In a seminal article published 80 years ago, Edward T. Newell identified a large group of Syrian tetradrachms previously believed to have been issued by the Seleucid king Philip Philadelphus as being, in fact, posthumous issues struck under Roman rule—the so-called pseudo-Philip tetradrachms (Newell 1919).<sup>1</sup> These coins have the obverse type head of Philip Philadelphus and the reverse type Zeus seated, and are characterized by a distinctive monogram to the left of Zeus, **Α**. The date, in terms of the Caesarean Era of Antioch (commencing in 49/48 B.C.) appears in the exergue. A full description of the type is as follows.

AR tetradrachm, ca. 25-27 mm, 12:00.

*Obv.* Diademed head r. of Philip Philadelphus, fillet border.

*Rev.* **ΒΑΣΙΛΕΩΣ|ΦΙΛΙΠΠΟΥ** in vertical lines to r., **ΕΠΙΦΑΝΟΥΣ|**  
**ΦΙΛΑΔΕΛΦΟΥ** in vertical lines to l.; Zeus seated l. on

<sup>1</sup> The author wishes to express his gratitude to Classical Numismatic Group, Inc., which made the coins described here available to the author for study, and in particular to Victor England, Kerry Wetterstrom, and Barry Murphy. Mr. Murphy photographed the coins for the plates of this article and weighed a large number of them. The author also thanks Arthur Houghton, who read a draft of the article and provided helpful comments on it, and Gordon Street, who assisted the author with the statistical analyses of the coins' weights.



throne, l. hand rests on scepter, in r. hand Nike crowning Zeus with wreath, thunderbolt above; below throne, Λ; to l. of Zeus, Χ; the whole encircled by laurel wreath (except top); date in exergue.

A quarter-century later, Alfred R. Bellinger identified two additional issues of pseudo-Philip coins which are undated and bear different monograms representing Crassus and Cassius (Bellinger 1944). In addition, Bellinger subsequently reattributed the type with the monogram ~~Χ~~ as an issue of Aulus Gabinius, the governor of Syria from 57 to 55 B.C. (Bellinger 1952, 55-57), which Newell had originally interpreted as being of Caesarean Year 2. Finally, the first volume of *Roman Provincial Coinage* catalogued these coins and documented examples with additional dates unknown to Newell (*RPC*, 612-14).<sup>2</sup>

In September 1998 the author examined a hoard of 677 pseudo-Philip tetradrachms. The coins were in worn condition and had been darkly toned and encrusted when purchased, but had subsequently been cleaned. Although only 312 of the coins bore legible dates (the date on these coins is frequently struck off the edge of the flan), the number of dated coins significantly exceeds the 111 recorded in *RPC* (nos. 4127-49). The group, which will be referred to as the "Livia Hoard,"<sup>3</sup> yielded examples of one previously unknown date (year 23) and confirmation of the previously reported but unconfirmed terminal date of the series (year 36),<sup>4</sup> as well as some minor varieties. The coins

<sup>2</sup> *RPC* (612-13) incorrectly describes the monogram on the dated coins as ΑΥΤΒ, the monogram of Aulus Gabinius which appears on *RPC* 4124. The monogram on the dated coins is Χ, standing for ΑΝΤΙΟΧΕΩΝ ΑΥΤΟΝΟΜΟΥ.

<sup>3</sup> Since the find spot of the hoard is unknown, the author has named it after his youngest daughter. By coincidence, all of the coins were struck during the lifetime of Livia, the wife of Augustus Caesar.

<sup>4</sup> Neither of the two coins previously reported as being of Year 36 seems to bear that date. The Oxford coin reported as Year 36 by Walker (1977, 80, n. 36) seems to match the dies of the Berlin specimen of Year 32. See note at *RPC* 4148. H. R. Baldus read a coin in the British Museum as being of Year 36, but it was published in *RPC* as a coin of Year 33. See note at *RPC* 4149, and plate for *RPC* 4149. However, the author believes that it is a coin of year 32 (see n. 10 below). The single Year 36 coin from the Livia Hoard has Λ to the left and ς to the right, while the two coins misread as Year 36 have Λ to the right of the other digit.

without legible dates can be dated to either 47/46-38/37 B.C. (pre-Actian) or 31/30-14/13 B.C. (post-Actian) based on the shape of the leg of Zeus's throne<sup>5</sup>, and are listed at the end of Table 1.

TABLE 1

<i>Year</i>	<i>B.C. Date</i>	<i>RPC No.</i>	<i>No. of Coins</i>	<i>Obv. Dies (Gross)</i>	<i>Obv. Dies (Net)</i>
Γ(3)	47/46	4127	10	1	1
Δ(4)	46/45	4128	33	8	8
Ε(5)	45/44	4129	8	2	2
Ϛ(6)	44/43	4130	6	1	1
Η(8)	42/41	4131	6	3	3
Θ(9)	41/40	4132	4	1	½
Ι(10)	40/39	4133	17	2	1
ΒΙ(12)	38/37	4134	10	2	1½
ΙΘ(19)	31/30	4136	64	3	3
Κ(20)	30/29	4137	26	3	3
ΑΚ(21)	29/28	4138	15	2	2
ΒΚ(22)	28/27	4139	5	2	2
ΚΓ(23)	27/26	—	3	1	1
ΚΔ(24)	26/25	4140	17	3	2½
ΚΕ(25)	25/24	4141	8	2	1
ϚΚ(26)	24/23	4142	7	3	2
ΚϚ(26)	24/23	—	1		
ΖΚ(27)	23/22	4143	11	4	3
ΗΚ(28)	22/21	4144	20	8	7
ΘΚ(29)	21/20	4145	21	2	1½
Λ(30)	20/19	4146	11	1	1
ΑΛ(31)	19/18	4147	3	2	1¼
ΒΛ(32)	18/17	4148	1	1	¼
ΓΛ(33)	17/16	4149	4	2	1¼
ΛϚ(36)	14/13	—	1	1	¼
Γ(3)-ΒΙ(12)	47/46-38/37	4127-4134	43	—	—
ΙΘ(19)-ΛϚ(36)	31/30-14/13	4136-4149	322	—	—

<sup>5</sup> The pre-Actian coins have a throne leg which is usually ornamented solely with ovals, while the post-Actian coins have a throne leg ornamented with a large triangle at the base as well as small ovals or small triangles. The stylistic distinction between the two groups was first pointed out in Newell (1919, 104).

The gross number of obverse dies shown in Table 1 is the number of obverse dies observed for coins of the year in question. The net number of obverse dies includes an adjustment for dies which were observed on coins of more than one year. When a die is known for coins of two years, it has been counted as one-half die per year. Obverse die links were noted between coins of Years 9 and 10, 10 and 12, 24 and 25, 25 and 26, 26 and 27, 27 and 28, and 28 and 29. In addition, in the four final years of the series (31, 32, 33, and 36), a die link was observed between coins of all four years, and the die was counted as one-quarter die per year. One coin of Year 19 was an ancient imitation and was not included in the die count, although it was included in the total of 64 coins.

The years with the largest number of obverse dies observed are Year 4 (eight dies) and Year 28 (eight dies gross, seven dies net). The die count for Year 4 is not surprising because it is the second most common year in the hoard and *RPC* records seven dies for that year, the highest number listed in *RPC* for any of the dated pseudo-Philip tetradrachms (*RPC*, 611). The result for Year 28, however, is surprisingly high.

Examples are shown in the plates of coins from the Livia Hoard with the dates which are either not listed in *RPC* or which are listed but not shown in the plates of *RPC*: Γ (Plate 1, 1), ΚΓ (Plate 1, 2), ΚΕ (Plate 1, 3), ΚϚ (Plate 1, 4), and ΛϚ (Plate 1, 8). Also shown are coins of Years ΑΑ (Plate 1, 5), ΒΑ (Plate 1, 6), and ΓΑ (Plate 1, 7) with the same obverse die as the coin of Year ΛϚ, and an enlargement of the date on the coin of Year ΛϚ (Plate 1, 9). Examples of coins from the hoard with dates ranging from Γ to ΗΚ appeared at CNG 49, 17 Mar. 1999, 1028-44.

The coins with legible dates 3 through 12 (pre-Actian) comprise 30% of the total number with legible dates, but only 12% of the coins without legible dates can be dated to this period. In other words, the date was struck off the flan more often on the later coins. The date was illegible on 60% of the post-Actian coins, but it was illegible on only 31% of the pre-Actian coins. Thus, the relative frequency of the pre-Actian coins is exaggerated by a comparison based only on coins with legible dates. When coins with and without legible dates are



included, 137 of 677 coins (20%) can be dated to 47/46-38/37 B.C., while 540 of 677 (80%) can be dated to 31/30-14/13 B.C.

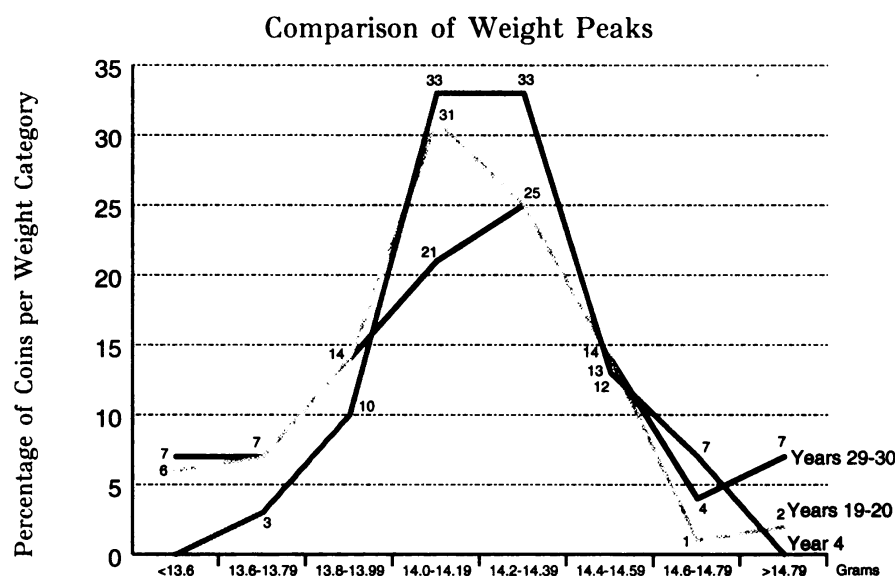
The mean weights of the pseudo-Philip tetradrachms listed in *RPC* (609) are 14.78 g (Years 4-12, 23 coins), 14.62 g (Years 19-24, 39 coins), and 14.11 g (Years 25-33, 27 coins). This led the authors of *RPC* (587 and 608) to conclude that the weight standard at which the tetradrachms of Antioch were struck declined during this period and subsequently stabilized at a somewhat higher level beginning with the coins with a portrait of Augustus. However, the weights of the coins in the Livia Hoard indicate that the standard was more or less constant during the entire period of their production.

The mean weight of the 43 pre-Actian coins in the Livia Hoard without legible dates was 14.1 g and the mean weight of the 322 post-Actian coins without legible dates was 14.26 g.<sup>6</sup> The mean weight of 13 coins dated Years 8-12 was 14.2 g. The mean weight of 19 coins dated Year 28 also was 14.2 g.<sup>7</sup> A more detailed study was made of the metrology of the coins dated Years 4, 19, 20, 29 and 30 in order to determine whether the weight standard of the pseudo-Philips changed over time. The mean weight of 30 coins dated Year 4 was 14.21 g, the mean weight of 61 coins dated Year 19 was 14.06 g, the mean weight of 22 coins dated Year 20 was 14.25 g, the mean weight of 19 coins dated Year 29 was 14.25 g, and the mean weight of nine coins dated Year 30 was 14.06 g. (The mean weight for Year 19 happens to equal that for year 30, and the mean weight for Year 20 happens to equal that for Year 29.) Median weights were not significantly different from the means. Graphs of the weights of the coins in 0.2 g increments grouped in three series (Year 4, Years 19-20, and Years 29-30) indicate peaks between 14.0 and 14.4 g for each of the three series, as shown below. Taken as a whole, the weights show a peak of ca.14.2 g for the coins in the Livia Hoard, which coincides with the mean of 14.17 g.<sup>8</sup>

<sup>6</sup> The undated coins were weighed (with pre-Actian and post-Actian coins weighed separately) on a scale sensitive to a tenth of an ounce, and the mean weight in grams was calculated. The mean for the post-Actian coins is given to 0.01 g because their total weight was large enough to provide four significant figures.

<sup>7</sup> These coins were weighed on a scale sensitive to a tenth of a gram.

<sup>8</sup> The mean was calculated for 138 coins with a minimum of 13.49 g and a



The weights of the coins in the hoard were undoubtedly reduced significantly by wear and corrosion. None of the more than 180 coins from the hoard which were weighed individually exceeded 15.0 g. Except for a slightly lower maximum for Year 4, the maximum weights for each year were remarkably consistent: Year 4, 14.61 g; 19, 14.83; 20, 14.88; 29, 14.87; and 30, 14.81. A small hoard of unworn pseudo-Philip tetradrachms (reportedly about 50 coins) ranging from Year 3 to Year 6 recently appeared on the market. Of 25 examples noted by the author, each weighed between 15.0 and 16.0 g, with an average weight of 15.55 g.<sup>9</sup> This is approximately the same as the mean weight of the earlier pseudo-Philip tetradrachms of Aulus Gabinius (15.34 g, as calculated *RPC*). Thus, it seems likely that the entire

maximum of 14.88 g. Three coins of Year 19 with weights below 13.20 g were excluded from the calculation as irregular in weight.

<sup>9</sup> Harlan J. Berk, Ltd. 108, 12 May 1999, 739-44; Harlan J. Berk, Ltd. 109, 20 July 1999, 268-71; Nummorum Auctiones 15, 15 June 1999, 528; NCirc, July 1999, 2756; Harlan J. Berk, Ltd. Numismatics on Line Auction, 15 Aug. 1999, 18; Pegasi 115, 20 Sept. 1999, 133; CNG 51, 15 Sept. 1999, 982-85; and Harlan J. Berk, Ltd. 111, 28 Oct. 1999, 232-37.

series of pseudo-Philip tetradrachms was struck at a weight standard of ca. 15.5 g.

The relative frequency of coins of the various dates in the hoard is generally consistent with the distribution of the specimens compiled in *RPC*, with some notable exceptions. Coins of Years 3, 10, and 30 were known to the authors of *RPC* by only one specimen for each year, but were represented by 10, 17, and 11 examples, respectively, in the Livia Hoard. Year 19, one of the two most numerous dates in *RPC*'s listing (13 coins for Year 19, 14 coins for Year 20), was by far the most common date in the Livia Hoard with 64 examples.

The Year 19 coins represent the resumption of the series after a hiatus between 38/37 and 31/30 B.C. It seems very likely that the gap was due to the replacement of the pseudo-Philip coins during those years by the tetradrachms of Antony and Cleopatra (*RPC* 606; Baldus 1987, 147; Houghton 1988, 83). The pseudo-Philip coins began to be struck again in 31/30 B.C., immediately after Octavius's victory at the Battle of Actium. The large volume of pseudo-Philip tetradrachms in that year was undoubtedly related to the reassertion of Rome's control in the East, and it could indicate that there was a partial recoinage of the Antony and Cleopatra tetradrachms in circulation at that time. Surprisingly, only three obverse dies were used to strike the 63 genuine examples in the Livia Hoard. There is some evidence that the die encountered most frequently was used beyond its normal life span, because die breaks are visible on some of the coins.

In addition to the discovery of coins of Year 23 and the confirmation of the previously uncertain coins of year 36, there were a number of minor varieties noted. As shown in Table 1, there was one coin of Year 26 with the numerals shown as KϚ instead of the usual ϚK. Fifteen varieties were observed with distinctive control marks on the reverse. Only one of these has been recorded in prior publications: it was noted that the coins of Year 27 have a dot below the monogram (*RPC* no. 4143), and all 11 examples with that date in the Livia Hoard had a dot in that position. (There were 22 additional examples noted with a dot in that position, but on which the date was not legible.) The varieties with control marks are summarized in Table 2.



TABLE 2

<i>Year</i>	<i>Control Mark</i>	<i>No. with Mark</i>	<i>Total for Year</i>
Δ(4)	R1. Dot to r. of Nike's head	7	33
Δ(4)	R2. Dot inside crook of l. arm	26	33
AK(21)	R3. Dot to r. of shoulder	15	15
BK(22)	R4. Dot at base of throne back	5	5
KΓ(23)	R5. Dot above knee	3	3
KΔ(24)	R6. Dot to r. of waist	17	17
KE(25)	R7. Dot to r. of head	4 + 4?	8
ZK(27)	R8. Dot below monogram	11	11
HK(28)	R9. Dot to r. of head	18 + 1?	20
ΘK(29)	R10. Dot above forearm	5	21
ΘK(29)	R11. Dot above monogram, dot to r. of waist, and dot above forearm	6	21
ΘK(29)	R12. Dot to r. of waist and dot above forearm	6	21
ΘK(29)	R13. Two dots to r. of waist and dot above forearm	4	21
Λ(30)	R14. Dot to l. of Zeus' chin	11	11
ΑΛ(31)	R15. Dot to r. of Zeus' waist, dot above forearm, and dot to l. of triangle in throne-leg	2 + 1?	3

Probable additional control marks appear on some of the coins of Year 32 (Plate 1, 6) and on the one known coin of Year 36 (Plate 1, 8 and 9) in the form of dots on the back of Zeus's throne, which are not visible on coins of prior years, and a dot on the apex of Zeus's protruding knee on the coins of Year 33 (Plate 1, 7).<sup>10</sup> Enlarged photographs of coins from the Livia Hoard with the control marks listed in

<sup>10</sup> On the coin of Year 33 (see Plate 1, 7) there is a dot below Zeus's knee as well as on the knee, but this combination was not seen on any other coins of that date. The coin of Year 33 in the collection of the American Numismatic Society has a dot on Zeus's knee, but no dot below it. The coin shown in the plates of *RPC* as Year 33 (London 1930.8.12.26) has no dot on or below the knee, but the dots on the back of the throne back seem to match those on the coin of Year 32 illustrated here, although it is not from the same die. The date of the London coin is partly off the flan and the author believes that it is more probably ΒΛ than ΓΛ.

Table 2 are shown in Plates 1, 2, and 3, identified by the number listed in the second column of Table 2. The control marks have the incidental benefit of allowing numismatists to determine the dates of some pseudo-Philip coins on which the date is off the flan or otherwise illegible.

The dots described above were often concealed by making them resemble parts of the coins' types. For example, the dot above Zeus's forearm which appears on the coins of Years 29 and 31 (in combination with other dots) is located at the end of the right-hand tie of the wreath held by Nike, and is easily mistaken for part of the design. Likewise, the dot inside the crook of Zeus's left arm on the coins of Year 4, the dot to the right of Zeus's shoulder on the coins of Year 21,<sup>11</sup> and the dot to the left of Zeus's chin on the coins of Year 30 are all easily mistaken for knobs on the top of Zeus's throne. In each case, however, the dot appears on only side of the throne and does not appear as a rounded dot on coins of other years.

The control marks were not used to identify reverse dies, since the same mark appears on different dies. Nor were they used to match reverse dies to a particular obverse die, because some marks are associated with more than one obverse die. The same control mark usually does not appear on coins of different dates, although there is one apparent exception: the dot to the right of Zeus's head appears on coins of Year 25 and again on coins of Year 28. The dot to the right of Zeus's waist appears on coins of Year 24 and again on coins of Years 29 and 31 but only in combination with other marks which form a distinctive combination for each year. There may be other marks which served to distinguish the coins of Year 25 from those of Year 28.

<sup>11</sup> The dot to the right of Zeus's shoulder on the coins of Year 21 is in a position similar to the dot inside the crook of Zeus's arm on the coins of Year 4, but the two marks are easily distinguishable: in addition to the previously noted differences in the throne-legs between the post-Actian and pre-Actian coins, on the Year 21 coins (as on most of the post-Actian tetradrachms) Zeus's left arm wraps behind the scepter, while on the Year 4 coins (as on most of the pre-Actian tetradrachms) it is shown in front of the scepter. In addition, the upper part of Zeus's arm drops down from the shoulder on the Year 21 coins, while it is almost horizontal on the Year 4 coins. See Plate 1, 2 and 3.

If this is the case, then each control mark identified a specific group of coins struck during a period of a year or less, and may have served to earmark the mint's production of coins from a specific allotment of silver. This hypothesis is consistent with the fact that the aes coins of Antioch struck during the same period (*RPC*, nos. 4201-41) display no such control marks, even though the reverse type of the most common aes denomination is very similar to that seen on the contemporary pseudo-Philip tetradrachms of Antioch. However, the aes coins do have various symbols in the reverse field (e.g., cornucopia, star, or caduceus) in some instances, and these symbols may have performed a function similar to the control marks on the tetradrachms.

Perhaps the most striking aspect of the Livia Hoard is what it does not contain. The worn state of the coins makes it likely that they were deposited several decades after the striking of the latest coin (14/13 B.C.), and one would expect to find Roman imperial tetradrachms (e.g., those with obverse head of Augustus and reverse Tyche seated) in the same group.<sup>12</sup> The lack of first-century coins is probably the result of the separation of the pseudo-Philips from the remainder of the hoard after it was found. The pseudo-Philips are significantly different from coins with a portrait of a Roman emperor, and may have been considered less marketable. The Livia Hoard reportedly arrived in London a few years prior to its acquisition by the U.S. vendor, and this roughly coincides with the appearance of a large hoard of Julio-Claudian Syrian tetradrachms in Munich. It is quite possible that the

<sup>12</sup> See the hoards described in *RPC*, 610-11: hoards 4 (Bâb) and 6 (Dura) contained pseudo-Philip tetradrachms and imperial tetradrachms of the first century; hoard 1 (Aleppo) contained one lifetime issue of Philip Philadelphus and 22 posthumous Philips of Aulus Gabinius with almost no wear; hoard 2 (Sarnakounk) included 58 Seleucid tetradrachms and two posthumous Philips (one of Aulus Gabinius and one of Year 4), as well as eight tetradrachms of Antony and Cleopatra; hoard 3 (Diyarbakir II) included 136 of Philip Philadelphus and four posthumous Philips (one of Year 19 and three illegible); hoard 5 (Nineveh) included 121 posthumous Philips (Years 19 through 32 only) as well as Severan denarii and tetradrachms. Hoards 1, 2, and 3 were almost certainly deposited prior to the beginning of the imperial series. Hoard 5 is anomalous, and the pseudo-Philips in it probably represent a separate group set aside many years prior to the deposit date.

pseudo-Philips and the Julio-Claudian coins were originally parts of the same hoard. Similarly, any coins of Antony and Cleopatra in the original hoard could have been separated, although the author has not observed an unusual number of these coins in trade in recent years.

It is more difficult to explain the complete absence from the Livia Hoard of the pseudo-Philip tetradrachms with the monograms of Aulus Gabinius, Crassus, and Cassius (*RPC*, 606, and nos. 4124-26). These undated coins were struck during the decade prior to the initiation of the dated series, from ca. 57 to 52 B.C. While the tetradrachms of Crassus and Cassius are rare, those of Aulus Gabinius are by far the most common pseudo-Philips seen in trade,<sup>13</sup> and *RPC* records many more examples and obverse dies for the Gabinius coin than for any year of the dated series.<sup>14</sup> It is extremely unlikely that any Gabinius coins were separated from the dated coins because, according to the purchaser, the coins were acquired as a group before they were cleaned. At that time it was almost impossible to distinguish details such as the difference between the Gabinius monogram and the autonomous monogram which accompanies the coins with Caesarean dates—in fact, the purchaser thought that they were all Gabinius coins until they were cleaned.

This strongly suggests that by the time the Livia Hoard was deposited there were very few tetradrachms of Aulus Gabinius in circulation, even though the coins with Caesarean dates continued to circulate in large numbers. Based on Walker's metallurgical analysis of a single coin of Gabinius and multiple analyses of later pseudo-Philip tetradrachms (Walker 1977, 59), it appears that the Gabinius coins had a significantly higher silver content than the dated coins.<sup>15</sup> Since the accuracy of Walker's results has been questioned and in this

<sup>13</sup> The Aulus Gabinius coins seen in trade typically show very little wear. This suggests that they originated in a hoard or hoards deposited soon after they were struck and prior to the initiation of the series with Caesarean dates.

<sup>14</sup> *RPC* 4124 (Gabinius, 48 coins and 19 obverse dies). Based on *RPC*'s figures, the most common dated coins are *RPC* 4136 (Year 19, 13 coins and 3 obverse dies) and *RPC* 4137 (Year 20, 14 coins and 5 obverse dies).

<sup>15</sup> Walker's analysis of a single coin of Gabinius showed a silver content of 88%, while the later coins were mostly between 70 and 75% fine (Walker 1977, 59). See discussion at *RPC*, 609.

case they are based on a single coin, further metallurgical analyses should be conducted. If it is confirmed that the Gabinius coins were struck on a higher silver standard, it would appear very likely that they (and probably those of Crassus and Cassius, as well) were systematically removed from circulation by the mint authorities for recoinage as pseudo-Philip tetradrachms at the lower silver standard.

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## ENGRAVED GEMS IN THE COLLECTION OF THE AMERICAN NUMISMATIC SOCIETY II: INTAGLIOS WITH EROS

(PLATES 4–5)

JAMES H. SCHWARTZ

Eros appears with high frequency on ringstones of the Roman period. The data from collections of engraved gems obtained at known archaeological sites inform us that he was usually the most popular god in the west where his depiction constitutes 15 to 20 percent of all deities (see Table below). In the east, however, with the exception of Anit Hamberger's 165 gems found on the beach at Caesarea, the source of intaglios is not well documented. There is Maddoli's publication of seal impressions from an archive in Cyrene presumed to have been deposited in the early years of the second century (Maddoli:40-145). In this archive, Eros appears on seals somewhat less frequently than on the western intaglios. The distribution of types, however, may not be a reliable guide because all of the seal impressions were affixed to the outer surface of documents as a guarantee of authenticity. Although ringstones certainly were used as signets (Henig 1997:88-106), some must have been personal jewelry. Therefore, the devices on the archive's impressions may have been biased towards images thought proper for public use.

The taste of modern collectors might also be expected to influence the distribution of surviving types. Thus, the great collections in London, Berlin, Vienna, and other European cities, as well as the 529



gems in the collection of the American Numismatic Society, may not represent Roman taste accurately. Although the collections include some archaeological finds, they consist largely of gems acquired on the Grand Tour since the end of the eighteenth century.

The popularity of Eros as a device may not seem to require explanation, since the image of Cupid still continues to be meaningful. His antique images were explicated by Renaissance Neoplatonists (Wind 1968: 146, n. 58; 160-65; Panofsky 1939:129-69) and were magnificently resurrected in paintings and in emblem books (Gordon 1975:51-74). Even though Eros had some of the familiar attributes of modern Cupids and sweet, slyly innocent putti, he had other features acquired chiefly during the Hellenistic period. Many of the devices on engraved gems of the Roman period can be recognized in terracottas, notably from Tanagra and Myrina, and in southern Italian vase painting. Some of the sources for images of Eros include Daremberg-Saglio s. v. "Cupido (Eros)," 2, 1:1595-1611 (Collignon); *RE*, s. v. "Eros," 6, 1:484-542 (Waser); Griefenhagen 1957; *RAC*, s. v. "Eros (Eroten) II (in der kunst)," 6:312-342 (Rumpf); *LIMC*, s. v. "Eros," 3, 1:850-942 (Hermay et al.); *LIMC*, s. v. "Eros (in peripheria orientali)," 3, 1:942-952 (Augé et al.); *LIMC*, s. v. "Amor, Cupido," 3, 1:952-1049 (Blanc et al.). From literary sources, we can assume that panel paintings, figural tapestries, and silver, which have perished, also contained images of Eros (Webster 1964:156-77). These images, most of which were invented in the fourth century B.C., remained current until the end of the Roman period. As Richard Brilliant (1974:202-3) writes, "In the minor arts, especially in court silver, cameos, and gems, the connections and continuities were particularly intimate, not only because the workshops seem to have survived from the Hellenistic period into the Empire, but also because these craft traditions seem to have had greater, persistent autonomy. And those traditions had a Greek foundation." (Also see Plantzos 1999).

The gems in the collection have been divided into five groups. The first contains gems with devices deriving directly from identified Hellenistic or late Roman Republican statues. The next group shows Eros as victor, while the third shows the cycle of Psyche and the chastisement of Eros. The fourth group shows Eros as bringer of abundance and bliss. Finally, the last group shows Eros as Death.

*Eros as a Roman Copy*

Eros born of Chaos, the oldest of the gods, originally was seen as a cosmic driving force (Hesiod, *Theog.*, 116 ff.; Grantz 1993:3-4). In the classical period he was depicted as an enchanting adolescent with long wings. An alternative—and presumably later—myth made Eros the son of Aphrodite. In vase painting, he is shown approaching a potential love object in flight, often bearing a dove, cock, rabbit, or toy hoop as a gift or holding weapons to induce love—a bow and arrow, a torch, or a small whip (Shapiro 1992:53-72). He also carries the musical instruments played at a symposium—a lyre, double flute, or triangle. Eros as ephebe predominated on fifth century monuments and, because of his chastity, Eros the child was regarded as especially appropriate for religious ceremonies, particularly marriages (Nock 1924:152-55).

Major representations of Eros during the Hellenistic period show the god diminishing in age. Praxiteles' marble statue of Eros, made for Thespieae, removed to Rome by the time that Pliny described it (*NH* 36, 23), and destroyed by fire under Nero, shows a boy of about twelve years old. His statue at Parion also showed a pre-adolescent (Pliny, *NH* 36, 23; Horster 1970:42-43). The bronze Eros of Lysippos, also at Thespieae (Paus. ix, 27, 3), appears to be no older than ten in the 56 copies that have been identified (Johnson 1927:104-16; Döhl 1968:35-37). For Megara (Paus. i, 43, 6; Pliny, *NH* 36, 25), Skopas is reported to have made three statues representing aspects of Eros—Eros (Love), Himeros (Longing), and Pothos (Desire). Pausanias wrote, unhelpfully imprecisely, that the forms of the three statues differ as do their names and functions. The image of Pothos has been identified as a long-haired, winged boy leaning on a staff (see catalogue below, 1) (Horster 1970:75-82; Stewart 1977:108-12; Stewart 1990, 1:184).

By the end of the fourth century, the predominant image of Eros is that of a two- to six-year-old with short wings. Often, depending on the representation, Eros has multiplied into two or more Erotes. His aspects are also multiplied as he takes on the attributes of another god (2 and 3), now the trappings of all trades and professions—vintners, hunters, fishermen, blacksmiths, and tragic poets (4).

The dramatic change of Eros's age has frequently been noted, especially for terracottas (Myrina—Mollard-Besques 1963:48-61; Lyssipos—Döhl 1968:76-77), but has never been adequately explained. Döhl

conjectures that the change occurred first at Athens, where for a brief time early in the third century terracottas of Eros as ephebe existed side by side with Eros as child. If the change was initiated at Alexandria, it might reflect the increasing importance of the child Harpocrates in Ptolemy Soter's recently created Isaic trinity (Malaise 1972:198-203). A change in panel painting at Pergamum or some other major art center in Asia Minor has also been suggested to account for the new type of Eros at Myrina (Webster 1964:185). Wherever the change took place, these suggestions presume the influence of a powerful major work of art now lost. But they do not help explain the social and historical reasons for the change.

One simple explanation for the change in fashion is the decorative use of Eros as servant to Aphrodite. For example, vast numbers of southern Italian vase paintings show Eros bringing his mother mirrors, fans, and other toilet articles. This Eros as minion becomes politically important in the depiction of Venus Victrix, in which Eros offers Venus a helmet or some other part of Mars's armor for her admiration (5). Venus Genetrix (or Victrix if depicted with armor) was venerated by a succession of first-century Roman conquerors including Marius, Sulla, and Pompey (Schilling 1954:267-374), and Julius Caesar consecrated a temple to her as his personal ancestor in the Roman forum.

### *Eros as Victor*

Poets in antiquity often offered another more poignant explanation for why Eros is depicted as a child, as in Propertius's elegy 2, 12 and in more than 60 poems of the *Greek Anthology* that tell of the joys and anguish of love. Eros is a child because love is childish: it is playful, irritating, violent, undisciplined, painful, but nevertheless irresistible, beautiful and, sometimes, delightful. Apollonius presents Eros as a mischievous imp, toying with a golden ball taken from Zeus (*Argonautica* 3, 132 ff.), probably suggesting that Love toys with the world as a child with a ball. The most frequent metaphor for being in love used by the poets of the *Greek Anthology* is being burned alive by Eros's irresistible fire. Thus the treacherous charms of the impish child are preferred, however coyly, to the aloof cosmic beauty of the adolescent divinity. Another key difference between adolescent and child is that Eros the adolescent occasionally experiences love himself, whereas the child is either the instrument of passion or its symbolic representation.

Shown as a long-winged youth, Agon, the personification of the Contest, may be another source of Eros's iconography. In some copies of Praxiteles' statue, Eros crowns himself with a victor's laurel wreath. God of the Contest is an appropriate role for Love, who conquers all. One of the most common devices on engraved gems shows Eros wrestling with his brother, Anteros (6). Pausanias describes a relief in a gymnasium at Elis (vi, 23, 5) and two altars at Athens (i, 30-7) that show the struggle between Eros (Love) and Anteros (Love Returned or the Avenger of Scorned Love). This wrestling match also appears in vase painting, wall painting, mosaics, terracottas, and ivory boxes. Possibly the wrestling match was simply a popular plaque for the palestra, but on gems the match becomes allegorical—desire is quenched when reciprocated. Gems with this device might have served as magical charms for success in love as observed by Ovid (*Fasti* IV, 1, April), *Alma fave, dixi, geminorum mater Amorum* ["O gracious mother of the twin loves," said I, "grant me thy favor"]. In the Renaissance the meaning of this image changed still further. Neoplatonism transformed the wrestling Cupids into Higher and Lower Loves (Panofsky 1939:126-28; 1969:129-37).

The contest between Erotes is also shown in the cock fight (7 and 8). The rooster is credited with a prodigious libido that can be exploited by Eros. The cock fight is likely to have had the same allegorical sense as the wrestling match. For the Roman period the frequent representation of cocks fighting on funerary monuments extends this allegory to the wished-for triumph of the deceased over death (Cumont 1942/1966:398-99; Deonna 1955:139-42).

In intaglio 10, Eros is about to catch a ball. In antiquity, ball playing was rarely thought of as a contest although it was a popular sport. Many ancient notables, from Alexander the Great to Sidonius Apollinaris, had their own private ball courts (*sphairisterion* or *sphaeristium*) (Harris 1972:75-111). A golden ball in Eros's hands as allegory for the world has already been mentioned. The figure of Nike standing on a sphere (the Victoriola) undoubtedly was easy to interpret as the world on coins of Augustus minted after the battle of Actium (e.g., *BMCR* 4338-40, denarii of 31-29 B.C.; Arnaud:53-116). The triviality of a child's ball game as an allegory for the whole world makes it quite clear that love makes the world go round and that Eros triumphs. He

celebrates by dressing a trophy (11) and by carrying laurel branches (12). On funerary monuments of the second century A.D. and later, depictions of contests and cock fights are allegories of the struggle with death, and the laurel crown and trophy represent the hope of immortality (Cumont 1942/1966:398, n. 4, and 462-84; Huskinson:18-20; 44-45; 105-7).

### *The Punishment of Eros*

Eros is not always represented as victor. Sometimes he is punished for his cruelty. At least 30 poems in the *Greek Anthology* describe the painful burns inflicted by Eros. Possibly the most common device in the collection shows Eros holding a lighted torch under Psyche as a butterfly (13). Unlike the tale told by Apuleius (*Metam.* VI.), Cupid rarely, if ever, is shown as a youthful lover, but rather as a wanton imp, so that Schlam (1976:31-40) concludes that the visual version of the Cupid and Psyche story is independent of the literary one. A gem engraved with the device of Eros scorching Psyche may have served as a magical charm intended to force a woman (represented by Psyche) to love the man for whom the stone was engraved (Bonner 1950:115-22). The scene evokes the magical papyrus called the "Sword of Dardanius" (PGM 4:1716-1870, Betz 1986:67-71, n. 221) and other examples of ancient love magic (Faraone 1999: 55-60; Winkler 1991: 214-43.) A strong indication that the device is magical is that some gems with this device are engraved with magical inscriptions (Delatte and Derchain 1964: nos. 325 and 326).

Psyche is the word for both butterfly and soul, and depictions of butterflies often appear on gems (14). The association of the butterfly with the soul has been traced to the beginning of the Mycenaean age (Vermule 1979:76). In funerary art, the theme of Eros and Psyche is allegorical and represents the wish that Eros intercede for Psyche, the soul of the deceased, and have her transported to Olympus, there to dwell as an immortal with the gods (Cumont 1942/1966:319-20; Huskinson 1996:52-54 and 102; Turcan 1966:585-88). Later, the agony of Psyche was given a Neoplatonic interpretation (Plutarch, *Amatorius* C. 7, p. 762; Wind 1967:126, n. 79).

A butterfly perched on a tiller attached to a steering oar (Casson 1971:225, n. 5) is an emblem that can be easily read (15). The rudder, an attribute of Fortuna, represents luck or fate, not a naval battle,

which is typically represented by a prow. Several other symbols frequently accompany rudders on gems and coins (C. Lentulus, 76 B.C., *BMCRSpain* 52, rudder, wreath, globe; T. Carisius, 46 B.C., *BMCRRRome* 4065, rudder, cornucopia, globe, scepter; L. Aemilius, 44 B.C., *BMCR* 4157-59, winged caduceus, fasces, globe, two right hands joined, ax; L. Mussidius, 42 B.C., *BMCR* 4237, rudder, cornucopia, globe, caduceus, apex; on gems, the kerykeon, thyrsus, and sistrum) suggesting that these elements form rebuses that were easily read and had a common syntax. Thus the caduceus and kerykeon represented Hermes, the thyrsus stood for Dionysus; and the sistrum for Isis. The scepter represented power, the wreath victory, the cornucopia abundance, and the globe the civilized world (see for example, Brendel 1980:7-26). These emblems composed of recognizable symbols or attributes were particularly popular in the mid-first century B.C. A gem published by Furtwängler (*AG* 30, 37) shows Eros as ruler of the world, seated on a globe, with his left hand on a tiller and Nike perched in his right. Thus the device on this gem must be some version, erotic or Neoplatonic, of Love governing the fate of the world.

If only for his inconsiderate treatment of Psyche, Eros deserved to be punished (Curtius 1930:53-62). The punishments of Eros depicted on intaglios 16 and 17 are typical. Amulets showing Eros bound before a column with the inscription ΔΙΚΑΙΩC (justly) are magical and are meant to punish the object of an unrequited love (Bonner 1950:121; Delatte and Derchain 1964:235-39). Three of these magical amulets in the collection of the American Numismatic Society were published previously (Schwartz and Schwartz 1979: nos. 58, 60, and 61) together with a gem showing Aphrodite bound with a rope, the end of which is held by Eros (59). The figure of Nemesis signifies retribution and she is also the goddess of gladiatorial games (*munera*) (Hornum 1993). Perhaps the image implies not only that Eros must be punished but also that, like a gladiator, he is about to die. The figure of Eros with a pickaxe suggests that Nemesis has given Eros a more lenient sentence—just hard labor.

A large group of gemstones show a rustic shrine (*aedicula*) approached by Eros or a woman for the purpose of making an offering (Brogli 1996). An example with Psyche as suppliant is shown in 18. Psyche's position in front of the *aedicula*, which is built on stylized rocks, the

flowering branch that appears to be growing from the shrine's roof, and the rustic landscape, are all characteristic of these gems. The aedicula is an outdoor shrine to house a statue of Priapus, the son of Aphrodite and therefore Eros's brother. Priapus's principal function in this pastoral setting is to protect a field or garden from thieves with his monstrous erect penis as a weapon. Offerings are made to ensure that he does his job (O'Conner 1989). But, protection against thieves does not seem to be a likely explanation for the gems in this group. A more plausible function is as charms to prevent (or cure) impotence, in accordance with poems 34 and 37 of *Corpus Priapeorum* (O'Conner 1989:129-30). This interpretation, which understands these gems as medical magic, makes Eros (or Psyche) only a suppliant or intercessor for the impotent possessor of the ringstone and serves to emphasize the remarkable fact that Eros is rarely directly concerned with the physical machinery of love-making (Clarke 1998:47-48 and 59-118).

#### *Eros as Bringer of Abundance and Bliss*

The image of Eros emerging from the calyx of a flower is readily interpreted as a symbol of creation, birth, Dionysiac enthusiasm and abundance, and, possibly, of sexual arousal (Jucker 1961). The epiphany of a god or goddess from a flower occurs in vase painting, altars, and reliefs from Hellenistic Pergamum to Greek Italy (Castriota 1995:58-86). The image of the infant Harpocrates seated on a lotus—signifying the quotidian birth of the universe (Plutarch, *De Iside et Osiride*, 11,355B)—is often seen in small bronzes, terracottas of Roman Egypt, and engraved gems. The image of the Egyptian god came to Rome at least as early as the first century B.C. (Tran Tam Tinh 1964; Kondoleon 1994; 191-229). Because the theonomous tendril represents the good and blissful life (Castriota 1995:58-86, 170-74), it was inevitably also used to represent death, with the implied wish that the deceased would be born again into a happy and bountiful hereafter. The glass paste intaglio (19) is therefore multi-valent: it could signify an amorous wish to begin a love affair (Eros grabs hold of Psyche) or a pious eschatological prayer for the deceased who is about to recapture his soul as an immortal in his new and bountiful life to come.

On sarcophagi, various retinues of celebrants that accompany a god (*thiasoi*) also signify the wish that the deceased reach paradise

(Turcan:587-88; Huskinson 1996:45-46). As with several of the other gems in the collection, Eros is shown as either a terrestrial or marine celebrant (20 and 21), which can mean either bliss in this life or bliss in the hereafter. The double flute is an instrument appropriate for the symposium, and it is played by members of the retinue accompanying the drunken Dionysus. Representations of *thiasoi* occur in mosaics on floors of dining areas (Dunbabin 1978:181-82; Kondoleon 1995: 191-229) presumably to suggest that the host and his guests eat, drink, and be as blissful as the god's revelers. Marine *thiasoi* can accompany Dionysus but usually celebrate Poseidon and Thetis, as in an important statuary group by Skopas (Pliny *NH* 36, 25) that represented a procession accompanying the slain Achilles to his own Isle of the Blessed in the Black Sea (Lattimore 1976:13-27).

Intaglios 22 and 23, which show Eroses fishing or crabbing, also express wished-for bounty. Both sporting images are incorporated into pastoral wall paintings and mosaic floors, typically for baths (see Dunbabin:206) showing a great crowd of Eroses fishing the sea from the shore or from boats. They also are reminiscent of river scenes, especially of the Nile, showing the god Nilus with his 16 children climbing all over him. Although the children represent the 16 cubits of the Nile, the scene conveys fecundity and abundance. These devices indicate both carefree happiness and nature's inexhaustible abundance.

### *Eros as Death*

The Eros with crossed legs, asleep and leaning on an inverted torch (24) occurs with great frequency in funerary art (McCann 1978:51-52; Toynbee 1934/1967:212-30; Hartmann 1969). The image has been interpreted in two ways, either as Eros representing Death itself or as Eros mourning the lost life of the deceased. Renaissance Neoplatonists (Wind 1968:152-70; Lessing (1969/1962:1769) held the first view, modern scholars the second (e.g. Cumont 1942/1966:409-12). It is clear, however, that the device does not represent Thanatos, whose iconography and attributes are quite different (*LIMC*, s. v. "Thanatos," 7, 1:904-8 [Bazant]). The distinctive features of this Eros are vigilant sleep, an inverted (and sometimes extinguished) torch, and crossed legs.

All but the crossed legs are intuitively and easily explained. Sleep is universally associated with death (Homer, *Iliad*, xvi, 681, 2). Eros's



state of consciousness between sleep and wakefulness is reminiscent of mourning women on Attic tombs of the fourth century who crouch cross-legged and express intense devotion (Collignon 1911:203-14). The burning torch, signifying love, ardor, and life, is carried upright by Eros in vase paintings and other scenes, particularly those representing weddings, but downward and extinguished for death.

Philostrates (*Imag.* I 2) describes a painting of Comus, the personification of the revel, at a wedding feast. He stands before the chamber of the newly-weds, flushed with wine, but asleep. His torch has slipped from his hand, and, in order not to be burned, he crosses his legs. The most obvious interpretation of the inverted torch in funerary art is that it signifies the end of love, ardor, and life. Similarly, the inverted club of Heracles (Bayet 1922), intaglio 25, indicates that life's labors are finished. In funerary art, Eros appears with the attributes of Heracles or at rest on the skin of the Nemean lion. Cumont (1942/1966:408) proposes that, like the most celebrated hero, the deceased can expect a glorious apotheosis to follow a brief, blissful rest.

No convincing explanation of the crossed legs is available. A practical explanation is to ensure that the beholder realizes that the figure depicted is leaning, since the position is difficult to assume without support. Satyrs are often shown with legs crossed, possibly because of Praxiteles' statue of a satyr resting against the trunk of a tree (there is a Roman copy of the statue in the Capitoline Museum, Rome). Cross-legged shepherds lean on their staffs and look serenely at their flock. Pan also is shown cross-legged. On coins of Caesarea Parias, a cross-legged Pan leans on a tree-trunk to play a flute (*SNGANS* 6: Marcus Aurelius 861, 862, 863; Septimius Severus 864; Caracalla 870, 871; Elagabalus 881, 883, 884, 885; Julia Maesa 886, 887, 888; and Julia Soamias 887; see reverse A, a bronze of Plautilla (A.D. 202-5). The figure almost certainly was a statue celebrating the pseudo-eponymous genius of the city. Later coins in this series show the statue within a grotto enclosed in a colonnade (representing the sacred precinct Price and Trell 1977). In the description of intaglio 1, Pothos crosses his legs and leans on a staff. To explain why the later copies of the Pothos are so "wildly off-balance," Andrew Stewart 1990:184 suggests that the original leaned directly on a statue of Aphrodite, as described in the fragment of Alkman (361), "In limb-relaxing Pothos he looks/more



reverse A

meltingly than Sleep and Death." By this argument, all derivative images were made cross-legged in ignorance, since the original configuration had been forgotten.

Clearly the stance signifies more than that the subject is relaxed. Pliny remarks (*NH* 28, 59) that crossing fingers or legs is regarded as sorcery and was forbidden at councils of war or policy because it impeded the transaction of business. Presumably the stance was like crossing one's fingers while making a promise. The two torchbearers in the Mithraic tauroctony stand cross-legged on either side of the bull that Mithras is slaying, Cautopates with ignited torch held down and Cautes with torch upright. These figures, both of whom are wide awake, are thought to represent the autumn and spring equinoxes. (Ulansey 1989:112-16). It has been suggested that the cross-legged position represents the cross (*chi*) described by Plato (*Timaeus* 36b) that is formed by the celestial equator and the zodiac and that intersects at the equinox (Deman 2:514-17). It is uncertain whether these examples of the cross-legged stance are related, but they suggest that the posture might have magical and possibly cosmic significance.

What is the origin of the cross-legged Eros with the inverted torch? Most writers follow Collignon (1911:329-39), who asserted that because of a direct stylistic tie with terracottas buried in tombs of Asia Minor, particularly Myrina, this type originated in Hellenistic art. But the Louvre's extensive Myrina collection contains only one figurine and a fragment of another of this type, both of which date to the first century B.C. (Mollard-Besques 1965: nos. 683 and 1123). Representations on engraved gems beginning in the first century A.D. appear to be the earliest widespread use of the device. At the end of the century, corresponding to the greater use of sarcophagi for interment, the depiction becomes increasingly common. From the mid-second century (from the reign of Antoninus Pius to that of Caracalla), several cities



reverse B

in the east (in Moesia, Thrace, Bithynia, Phrygia, and Caria), notably Aphrodisias, issued coins showing the cross-legged Eros on the reverse (Riggauer 1881:72-100; McDonald 1992:106, type 120; see reverse B, a bronze of Geta as Caesar, A.D. 198-200, from Pautalia Thrace). It is tempting to suggest that these coins commemorate a lost cult statue representing a cycle that originated in Persia involving a goddess equivalent to Aphrodite and her dying son or lover. Thus, the original name of Aphrodisias was Ninoé and was consecrated to Nina-Ishtar, the goddess of Love and War (Laumonier 1958:478-500). Evidence against this idea, however, is that during this period these same cities also issued coins with many other novel or foreign gods (for example, Harpocrates, Helios, Isis, Men, and Serapis).

For the most part, the Romans appear to have used their ringstones during life, judging from ancient sources (Henig 1997:88-106) and from archaeological finds, notably baths where they are found in abundance (Zienkiewicz 1986:117-45; Henig 1988:27-35). In contrast, gems showing a cross-legged Eros with inverted torch are likely to have been made and worn as funerary jewelry. Several pairs of cameos carved with this device and set in gold earrings have been found with one Eros matching the mirror image of the other. The pair in the Hermitage (Neverov 1988:372/373) were excavated in a tomb in Chersonesus. Use of this Eros on personal jewelry supports the idea that the device is a representation of Death as the beloved rather than of Eros mourner of the dead.

## CATALOGUE

Intaglios either are engraved in stone, glass, or metal or are cast in glass paste. Unfortunately, in several comparanda, the material was not indicated. The word *stone* indicates that the gem is not glass, while a question mark (?) indicates that the material is not known.

The size of a gem is given in millimeters. The long axis appears first, then the transverse axis, and finally the thickness. For shape, I have used John Boardman and Erika Zwierlein-Diehl's system as described by Henig in *Fitzwilliam*, pp. xxiv-xxv. The letters A, B, and C describe the surface curve, while an F indicates a flat surface. The number that follows indicates the general shape of the profile of the intaglio. The description of the device is as it would appear in an impression, as are the plates which are enlarged about 3x. This is followed by a list of other similar pieces. Precise dating of Roman intaglios is notoriously difficult. Almost all of the gems date from the mid-first century B.C. to the end of the second century A.D. The specific dates given in this catalogue, which are tentative at best, are based on style, popularity of the particular device, and the drill technique, following Maaskant-Kleibrink in *Hague*. The date is followed by a citation of any previous publication of the object and the ANS identification number. The intaglios were deposited at the Society during the first half of the twentieth century. Duffield Osborne, who died in 1917, left 303 gems and the rest of the collection, 226 gems, was given to the Society by Edward T. Newell. Most of the gems probably originated in the eastern part of the Empire.

#### Frequency of Eros on Gems from Archaeological Sites

	Eros % of Deities	Deities % of total	Total
Britain	15*	32	1087
Xanten I	21*	38	253
Xanten II	20*	41	398
Luxembourg	9	14	166
Gaule	19*	25	1015
Naples I	19*	25	339
Aquileia	18*	30	1573
Caesarea	10	44	165
Cyrene	12	22	1122+

\*Most frequent of the gods.

+ A significant number of the seal impressions in the archive were not legible. Only legible impressions are counted here.

1. *Eros as Pothos*. Glass paste. 1.2 x 1 x 0.2. F1.

Eros naked and with long hair faces right, his left leg crossed over his right; he leans on a decorated staff, which he holds at its middle with his right hand; his left arm is extended to hold the upper part of the staff. Groundline. The staff appears to be made of two symmetrical longitudinal components. On other gems this staff has been called a double thyrsus. The meanings of crossed legs are discussed above (see 24 and 25 below).

AG XLIII, 52 (nicolo); *Beschreib.* 3779 (paste), 8199, 8200 (nicolos); *Bonn* 46 (lapis); Damascus Museum 365 (seal impression in LIMC s. v. "Eros," 3, 2, no. 64; Fossing 783 (plasma); *Hague* 938 (agate); *Britain* 111 (nicolo); *Köln* 49 (nicolo); Lippold XXVIII, 8 (paste); *Munich* II/1 47, 589 (carnelian); *Munich* I/2, 1051 (paste); *Welcome* 47 (glass); *Würzburg* 194 (sardonyx).

Last quarter of the first century B.C. 35547.

2. *Eros Standing with Lyre Resting on a Column*. Carnelian. 1.3 x 1.1 x 0.25. A4.

Eros wearing a long mantle stands right holding a lyre supported by a short column. Groundline. The image is derived from the Apollo kitheroïdes of Skopas, and is featured prominently in Octavian's coinage after Actium, as well as in Nero's. (Bieber: 108-10). Skopas's statue was set up on the Palatine during the reign of Augustus (Pliny *NH* 36, 25). The lyre accompanied recitations of serious poetry.

AG XXVI, 6 (paste), XLIII, 39 (amethyst); *Beschreib.* 1577 (paste) no column for lyre, Eros seated, 1583 (paste) no column, 3709 (paste) Eros seated, 7444, 7445 (carnelian); *BMGems* 1476 (sard); *Göttingen* 132, 832 (paste), Eros seated; *Hannover* 132 (paste) seated = AG XXVI, 6; *Kassel* 34 (nicolo); *Munich* I/1, 546 (granite) seated; Richter II, 149 (amethyst); *Xanten* II, 25 (carnelian).

First to second century A.D. 35538.

3. *Eros Walking with Lyre*. Carnelian. 0.9 x 0.7 x 0.2. F1. Chipped.

Eros naked walks right holding lyre.

AG XXV, 8 (sardonyx), another E. holds a dove; *Beschreib.* 941 (paste); *BMGems* 1510 (sard), 1215, 2876 (pastes); *Content* 97 (cameo);

*DL* 391 (chalcedony); *Fossing* 770, 771 (pastes); *Gadara* 170 (sardonyx); *Getty* 469 (clay seal); *Gramatopol* 285 (carnelian); *Hague* 381 (carnelian), 480, 507 (plasma); *MMA* 305 (agate); *Münz. u. Med. (Sonderliste Q, November 1976)* 106 (cameo); *Naples I*, 25 (topaz); *Wien II*, 1057 (banded agate).

Second half of first century B.C. 36805.

**4. *Eros as Tragic Poet.* Carnelian, 1.3 x 1.0 x 0.25, F6. Chipped.**

Eros naked and stepping right rests a mask on a column with his right hand and holds a *pedum* in his left. His expression is one of awe or inspiration. Groundline. The *pedum*, an attribute of Dionysus, often is used to denote an association with the theater. Because he is not wearing a stage costume, Eros is not meant to be an actor. The device possibly is derived from a painting of the mid-second century poet, Philikos, by Protogenes (*Pliny, NH*, 35, 106).

*Aquileia* 336 (red jasper); *Beschreib.* 1114 (granite), 1595, 1599, 1600, 3727-29 (pastes), 8202 (nicolo); *BMGems*, 2900 (paste); *Gadara* 172 (carnelian); *Getty* 360 (red jasper); *Hague* 684 (not Eros but an actor, plasma); *Britain*: 684 (plasma); *Munich I/3* 2195 (carnelian); *Princeton* 83 (carnelian); *Sternberg XXV*, Nov. 1991, 736 (nicolo) Eros crouching.

Second half of first century B.C. 35542

**5. *Eros Offers Venus a Helmet.* Carnelian. 1.2 x 1.0 x 0.3. F1. Chipped.**

Venus naked seen from behind leans with her right arm on a short column; her left arm is outstretched to receive a helmet offered up to her by Eros who stands at her right. Groundline. The type is from statues of Venus Victrix, adopted by Julius Caesar and Augustus as their personal ancestor.

*AG LXIV*, 77 (prase); *Bari* 7 (heliotrope); *Beschreib.* 2393 (Eros holds mirror); *BMGems* 2812 (paste), 3735 (paste cameo); *Bonn* 3 holds a thyrsus (banded agate); *Dalmatia* 16 (carnelian); *Fossing* 712 (carnelian); *Getty* 244 (amethyst), 245 (plasma), 246 (nicolo), 247 (plasma); *Hague* 531 (plasma); *Hannover* 798 (burnt jasper); *MMA* 301) heliotrope; *Munich I/3*, 2282 (carnelian), 2494 (plasma); *Wien II* 1476 (plasma); *Würzburg* 333 (carnelian).

First century A.D. 35635.

**6. *Eros Wrestling*. Carnelian. 1.1 x 1.0 x 0.2. F1. Chipped.**

Eros left naked wrestles with an apteric counterpart who appears to be losing the fight.

*AG* LII, 30 (?); *Aquileia* 345 (carnelian), 346 (black jasper), 347 (burnt sard), 348 (red jasper), 349 (quartz), 350, 351 (carnelians); *Beschreib.* 1669 (paste), 3049 (carnelian), 3766 (paste), 6796, 7496-7505 (carnelians), 7506, 7507 (sardonyx); *Bonn*, 94 (sard); *BMGems* 1525- (both boys without wings) 1527 (sards), 2913-2916 (pastes); *Braunschweig* 61 (carnelian); *de Clercq* 3114 (carnelian), 3115 (granite); *Fossing* 1733 (carnelian); *Gadara* 182 (carnelian); *Getty* 204 (carnelian—a third Eros is referee); *Göttingen* 141 (paste), 142 (carnelian); *Gaule* 378 (paste, wrestlers over a *dexterum iunctio*); *Hague* 208 (burnt carnelian) with third Eros holding palm for victor, 631 (carnelian, with palm, wreath, and herm) 902 (carnelian); *Hannover* 837, 1464-66 (carnelians), 838 (granite) with an amphora for the Athenian games; *Britain* Ap. 120 (carnelian); *Lewis* 59 (carnelian); *Leiden*, p. 26 (carnelian); *Lippold* XXVI, 2 (?); *Maddoli* 310-12; *Munich* I/2, 1183 (paste); *Münz. u. Med.* 379 June 1979, 80 (carnelian); *Naples* I, 36 (carnelian); *Naples* II, 119 (cameo); *Nürnberg* 9, 10 (carnelians); *Righetti* 58 (opaque yellow graystone); *Udine* 88 (carnelian, with vessel holding palm), 89 (heliotrope); *Wien* I, 438 (carnelian); *Wien* II, 1342 (amethyst); *Xanten* II, 23 (carnelian).

While mortal wrestlers always lack wings, it is quite rare for wings to be missing on only one of the wrestlers (*Hague* 631 and 902; in 902 one of the wrestlers is Pan). Many of the gems show herms, wreaths, and palms.

First to second century A.D. 35535.

**7. *Eros Preparing Cock for a Fight/Bust of a Woman (Goddess?)*. Carnelian. 1.0 x 0.9 x 0.4 F1. Fragment, approximately half the stone remains. Engraved on both faces.**

A. Face with greater area, figure along the long axis of the stone. Diademed and possibly filleted bust of a woman looking right, broken just below the shoulders. She wears a peplos with the fold of the right collar thicker than that of the left.

B. Eros guides a cock with his outstretched right arm. A mirror image of the rooster's head and neck faces left, presumably with

another Eros on the lost portion of the stone. Groundline. The cock fight is engraved at right angles to the woman on the A face. In antiquity, except for amulets, gem stones were rarely engraved on both sides, since the setting in a ring obscures the B face. There are a few examples in which the two sides are thematically related, *Lewis* 109, Fortuna and a kneeling worshipper./An inscribed prayer to the divinity; *Hannover* 1596, head of Commodus/Jupiter on an eagle, indicating the divinity and apotheosis of the emperor. In others there is no thematic link. The reverse of a carnelian intaglio showing cows and a suckling calf dating from the Augustan period (*Fitzwilliam* 225) was cut as a cameo showing Eros mourning, leaning on an inverted torch (*Fitzwilliam* 771). Because the A face of our gem is engraved in a finer style than is the B, Martin Henig suggests that the stone was re-cut at a later date.

For Eros, *Ashmolean* 355 (red jasper); *BMGems* 1528 (amethyst), 2917, 2918 (pastes).

A. Late first century A.D. B. second century A.D. 35797

**8. *Eros Riding a Cock.* Chalcedony. 1.3 x 1.3 x 0.3. F8.**

Eros naked sits astride a cock facing right, his right hand holding the cock's crop as reins. Groundline.

AG XLI, 47 (?), XLII, 32(?); *Beschreib.* 3836 (holding palm branch), 3761-65, 3837-40 (pastes), 7 524 (carnelian); *BMGems* 1528 (amethyst), 2918 (paste). Lippold XXVII, 13.

First to second century A.D. Osborne, pl. xviii, 9. 35529.

**9. *Eros Riding a Mouse.* Carnelian. 1.1 x 1.1 x 0.5. B1**

Eros naked facing right astride a mouse with his right hand wielding a large whip with a knob at its end and, in his left, holding the hairs on the mouse as reins. Groundline.

*Beschreib.* 3850 (paste); *Würzburg* 177 (carnelian).

If antique, second to first century B.C. This unusual gem may not be ancient. 35528.

**10. *Eros Catching a Ball.* Carnelian. 1.1 x 1.1 x 0.5 B1.**

Eros is running left, both arms outstretched. His left arm is slightly higher than his right, in order to catch a round object that is situated



in the field at the level of Eros's shoulder just to the left of his outstretched hands. The groundline extends only in front of Eros, indicating that he is running in that direction. It is possible that the round object is an indistinctly engraved butterfly; if so, the device is similar to carnelians in *Hannover* (271) and *Xanten II* (17) with numerous parallels listed there.

There are no parallels for a game with a ball. Several features of the device suggest that it may not be ancient: the wings are like those of an eagle, the head is not that of a child, and the rendering of the hands is unusual. But Furtwängler (*Beschreib.* 1112) published an Eros with similar features chasing a butterfly. There are many examples in south Italian vase painting from the fourth century B.C. of Eros playing ball; these images are associated with marriage.

If antique, second half of the first century B.C. 35546.

**11. *Eros Dressing a Trophy.*** Carnelian, 1.3 x 1.1 x 0.2, F6.

Eros naked, standing right, is about to place a sword in its sheath with his outstretched right hand on a trophy that already consists of a tree with a tunic and cuirass. Groundline.

*Aquileia* 3100 (carnelian); *Beschreib.* 3781 (paste), 7550 (sard), 7551-56 (carnelian). Two Erotes dress the trophy on 7554, and on 7556, Psyche sits as a captive with hands bound behind her back. *BMGems* 2910, 2911 (paste); *Braunschweig* 62 (carnelian); *De Clercq* 3100 (carnelian); *Gadara* 172 (carnelian); *Göttingen* 138 (paste); *Gaule* 366 (carnelian), 367 (stone), 380, 783 (carnelian); *Hague* 380 (carnelian); *Kassel* 36 (paste); *Lewis* 58 (carnelian) with two Erotes; *Maddoli* 231; *MMA* 306 (carnelian); *Munich I/1:360* (chalcedony); *Munich I/3*, 2552 (carnelian), 3083, 3084 (pastes); Münz. u. Med. 379, June 1976, 78 (carnelian); *Nürnberg* 14 (carnelian); Sternberg, XIX, Nov. 1987, 269 (banded agate); *Xanten II* 28 (onyx).

Second half of first century A.D. Osborne, pl. xxix, 8. 35531

**12. *Eros Marches with Branches of Laurel.*** Glass. 1.1 x 0.7 x 0.2. B3. Chipped on reverse.

Eros facing marches forward with laurel branches, one in his right hand held upward, the other in his left hand held downward. He appears to be wearing a coil or torque around his neck.

No parallels found. An apteric Nike advancing with olive branch held downward with her right hand appears on a stater from Terina, 480-460 BC (Kraay, p. 311, 2121.)

First to second century A.D. 35799.

**13. *Eros Holding Lit Torch underneath Psyche.*** Red jasper. 1.1 x 0.8 x 0.2. F1.

Eros standing right holds a burning torch in his right hand underneath a butterfly, which he holds high in his left hand.

*Aquileia* 291 (onyx), 292 (prase); *Beschreib.* 1640 (paste), 3065 (amethyst), 3885 (paste), 6775, 7483 (carnelians); *Bologna* 140 (carnelian); *Caesarea* 79 (carnelian); *BMGems* 1469 (sard); Dalmatia 56 (red jasper); *De Clercq* 3106 (red jasper); Delatte and Derchain 325 (hematite), 326 (black jasper); Eichler-Kris 44 (cameo); *Fitzwilliam* 396 (red jasper); Fossing 749 (paste); *Gadara* 168 (carnelian), 169 (sard); Gramatopol 175 (red jasper), 176 (carnelian); *Hague* 505 (plasma), 937 (nicolo), 443 (banded agate), 505 (plasma), 927 (nicolo); *Hannover* 850 (carnelian), 1469 (red jasper); *Britain* 118 (amethyst), 119 (banded agate); 120 (carnelian), 121 (nicolo), 122 (paste), 123 (onyx); *Lewis* 49 (carnelian); *Luxembourg* 3 (drawing, stone lost); *Marshall* 462 (paste); *Munich* I/3 2535 (carnelian); *Naples* I 28 (paste); Niemagen 124 (red jasper), 141 (carnelian); Sternberg XVII, May, 1986, 300 (amethyst); Svoronos 164 (stone) 919, 920 (cameos); Udine 80 (carnelian); *Wien* I 193 (carnelian); *Wien* II 1356 (topaz); 1358 (carnelian), 359 (nicolo); *Würzburg* 208 (sard), 209 (chalcedony); *Xanten* I 120 (nicolo).

Sometimes Eros is seated, as *BMGems* 2837, 2338, or uses the flame on an altar to burn Psyche, 2839, 2840 (all pastes).

Second century A.D. Osborne, pl. xxix, 9. 35541.

**14. *Butterfly.*** Carnelian. 1.0 x 0.9 x 0.25. B3.

A butterfly seen in profile is flying with wings slightly parted.

*Beschreib.* 2140 (amethyst); *Bari* 22 (carnelian); *BMGems* 2538 (sard), 2539 (plasma); 2540 (sard); 2541 (sardonyx) = *Marshall* 435; *DL* 103 (granite, with burning torch below), 106 (carnelian, with pupa and caterpillar); *Fitzwilliam* 155 (sard); *Göttingen* 547, 548 (pastes);

*Hannover* 1288 (carnelian); *Luni* 12 (carnelian); *Marshall* 481 (glass), 1178 (sard); *Munich* I/1, 429 (granite), 2071, 2072 (pastes); *Nürnberg* 359 (amethyst), 360 (red jasper); *Udine* 305, 306 (carnelian); *Wien* III, 1983 (sardonyx), 1984 (carnelian); *Xanten* I, 101 (carnelian); *Xanten* II, 17 (carnelian). 35007.

**15. Rudder with Butterfly Carnelian.** 1.3 x 0.9 x 0.2. F1.

Butterfly flies just above the governor of a steering oar.

AG XXIX, 12 (amethyst); Fossing 1540 (butterfly drawing back a bow, carnelian) *Munich* I/3, 2991 (carnelian). There are many examples of gems with rudders and other symbols: dolphin, palm, globe, thyrsus, club, kerykeon, star, cornucopia, birds, caduceus, scepter, wheat ears, sistrom, torch.

First century B.C. 35161.

**16. Eros Bound before Nemesis.** Carnelian. 1.2 x 1.1 x 0.2. F1. Chipped.

Eros naked is seated right with arms tied behind his back. He faces a pedestal or garlanded table on which is seated the figure of Nemesis as griffin. Groundline.

Caesarea 95 (red jasper); *De Clercq* 3110 (carnelian). *Hague* 245 (carnelian) and *Maddoli* 228 show Eros bound without Nemesis. Schwartz and Schwartz 58 (red jasper), 60 (green jasper), 61 (carnelian).

Second century A.D. 35543.

**17. Eros Condemned to Work with a Pickaxe.** Carnelian. 1.0 x 0.8 x 0.3. F1.

Eros naked leans right on a pickaxe. Groundline. While this depiction of Eros might possibly be a humorous genre piece like the Pompeian wall painting in the House of the Vettii (vi, 15, 1) which shows infant Cupids and Psyche carrying out the business of adult men and women, it is unlikely. On many other gems with this device Eros is chained and shackled. The tool is a mattock (*ligo*) used for digging out rocky soil (Horace, *Epode* 5, 30).

AG LVII, 9 (?); *Aquileia* 287 (burnt sard), 288 (red jasper); *Bari* 54 (carnelian); *Berlin* 449; *Beschreib.* 1113 (granite), 3891-94 (pastes),

7463-66 (two carnelian, one sard); Marshall 192 (engraved gold bezel; *BMGems* 1504 (nicolo), 1505 (sardonyx); *Dalmatia* 76 (red jasper); Fossing 756 (paste), 757 (carnelian); *Getty* 319 (chalcedony), 320 (carnelian); *Hannover* 265, 266 (pastes); *Britain* 134 (sard); *Hermitage* 61 (cameo); *Ionides* 63 (cameo); *Munich* I/1, 136 (paste); *Nürnberg* 18 (granite); Richter II, 652 (cameo, lost); *Sofia* 142 (carnelian); *Udine* 83 (carnelian); *Wien* III, 2785 (nicolo); *Würzburg* 212 (onyx), 213 (amethyst).

First to second century A.D. 35540.

**18. *Psyche Approaches a Rustic Shrine.*** Chalcedony, 1.3 x 1.2 x 0.1. F1.

Psyche is seen from behind dressed in an himation and with butterfly wings, approaching an *aedicula* perched at the top of stylized rocks. A flowering branch projects from the peaked roof of the shrine. Psyche possibly holds another flowering branch with her left hand. Groundline.

None with Psyche. With woman lacking wings: *Gaule* 523 (red jasper); *Munich* I/3, 3310 (paste) woman with two torches and a statue of Priapus in the shrine.

First to second century A.D. 36812.

**19. *Eros Emerges from a Rose.*** Paste. 1.4 x 0.7 x 0.2. A3.

Eros naked facing and arms crossed emerges from the calyx of a rose. He holds a butterfly in his right hand.

AG XXIV, 49, 50 (sardonyx) Eros shown from the knees up, emerging from a pomegranate blossom, XXVII, 1 (?) = Lippold XXVII, 11, exact parallel to ANS gem; *Beschreib.* 930 (sardonyx) 931 (paste) (Eros from calves up: *BMGems* 1021 (sard) from lotus flower; *Getty* 228 (banded agate) showing similar bust of Eros holding butterfly to his chest; *Munich* I 1187, 1188 (pastes); *Wien* I 431 (carnelian) from acanthus flower; *Würzburg* 206 (topaz) Eros springs naked from a lotus blossom to catch a butterfly in the field.

First century B.C. 35548.

**20. *Eros Piping.*** Prase. 1 x 0.6 x 0.2. B4.

Eros naked walks left, playing the double flute (*aulos*). Groundline.

*Aquileia* 286 (burnt sard); *Beschreib.* 3018 (amethyst); *BMGems* 2878, 2879 (pastes), 3468 (cameo); *DL* 213 (carnelian), 214 (prase), 215 (carnelian) Fossing 744 (paste); *Hermitage* 175 (cameo); *Wien* II 1354 (nicolo); *Würzburg* 200.

First to second century A.D. 35545.

- 21. *Eros Riding a Hippocamp.*** Carnelian. 2.0 x 0.9 x 0.25. A4. Broken, a fragment of the iron setting is still present.

Eros naked rides right on a seahorse, a tunny fish swims below.

*AG* XXIX, 23 (carnelian), XXXVII, 2 (paste), XL1, 40 (amethyst); *Aquileia* 275, 276 (red jasper). 277 (carnelian); *Beschreib.* 3037, 3038 (carnelian), 3039, 3040, 3805 (pastes), 6801 (amethyst), 7531 (carnelian); *BMGems* 1495, 1496 (amethyst), 2585 (sard), 2860, 3870 (pastes), 3397 (paste); *Braunschweig* 65 (carnelian); *Content* 110 (cameo); *Dalmatia* 78 (banded agate); *DL* 89 (carnelian), 217 (moonstone), 392 (carnelian); *Getty* 250 (banded agate), 322 (carnelian); *Gaule* 344 (nicolo), 345 (paste), 346 (red jasper), 347 (stone); *Hague* 703 (nicolo), 348 (paste), 904 (carnelian); *Hamburg* 825, 1459 (carnelian); *Britain* 127 (nicolo) 128, 129 (pastes); *Nürnberg* 25 (carnelian), 26 (chalcedony), 27 (carnelian); Righetti 27 (carnelian); *Princeton* 84, 85 (carnelians); *Wien* I 445 (chalcedony); *Wien* II 603 (glass), 1345 (carnelian); *Würzburg* 178 (plasma), 179 (nicolo), 180 (carnelian); *Xanten* II, 272 (red jasper).

First to second century A.D. 35195.

- 22. *Eros Fishing.*** Carnelian. 1.1 x 0.9 x 0.2. F1. Chipped.

Eros naked seated right on stylized rocks holds a rod and makes a loop in the line. Groundline.

*AG* XXVIII, 22(?), XLII, 29 = Lippold XXVI, 8 (?); *Beschreib.* 1630, seated on shell, 1631, in boat, left hand on governor of rudder, 1632, 1633, 3800-3801, seated on shell, 3802 (all pastes); *Bonn* 49 (carnelian); *DL* 216 (granite); Fossing 764 (carnelian); *Britain* 125 (red jasper); Nat. Museum of Hungary 23.1901.4, Budapest in *LIMC*, s. v. "Eros/

Amor, Cupido," 436 (carnelian); *Lewis* 56 (red jasper); *Udine* 86 (carnelian); *Wien* II 597 (glass); *Würzburg* 186 (paste).

First to second century A.D. 35530.

**23. *Two Erotes Crabbing.*** Carnelian. 1.3 x 1.3 x 0.3. F1. Chipped.

Two Erotes face forward. The one on the left is attacking a crab with a trident held high in his left hand. The crab's front claws extend upwards toward the tines of the trident. The Erotes each hold a similar oval object with their right hands. The chip masks what the Eros on the right is doing with his left arm. Groundline.

*Aquileia* 335 (carnelian); *Beschreib.* 3048 (amethyst), 7538 (carnelian); *Hannover* 829 (carnelian); *LIMC*, s. v. "Eros/Amor, Cupido," 442 (carnelian, unpublished Copenhagen, Mus. Nat. 9481); *Naples* II 121 (cameo) = Medici 55 plate 51; *Wien* I 436 (sardonyx), only a single Eros; *Würzburg* 187 (amethyst) with a statue of Priapus 188 (carnelian); 189 (eighteenth century drawing, stone now lost). The two uncertain objects held by both Erotes may be crab nets; alternatively, they may represent the flare of pine torches used for fishing with tridents (Aelian *V.H.* XII, 43; Oppian. *Hal.* V. 430).

Second century A.D. 35544.

**24. *Eros Mourning with Torch.*** Red jasper. 1.5 x 1.0 x 0.2. A4. Chipped.

Eros facing naked and sleeping with legs crossed leans on a burning (or extinguished) inverted torch, the end of which rests on a platform or altar. The other end of the torch is in Eros's left arm-pit; his right arm crosses his chest to brace the torch; his left arm is bent so that he can cup his chin in his left hand. Groundline.

*AG XXXVI*, 51 (amethyst), XLII, 43 (carnelian); *Beschreib.* 1635, 1636, 3711, 3712 (pastes), 7457-7461 (carnelian); *Berry* 224 (cameo); *Britain* 736 cameo; *BMGems* 3470, 3471 (cameos); *Content* 101-4, 105/106 (pair), 107-109 (cameos); *DL* 97 (carnelian), 98 (amethyst); *Evans* 69 (carnelian); *Fossing* 365, 760 (pastes), 1889 (cameo); *Getty* 449 (cameo); *Göttingen* 133 (nicolo); *Gramatopol* 282 (banded agate); *Hannover* 138 (carnelian), 264 (paste); *Hermitage* 367-71, 372-73 (pair), 374-75 (cameos); *Ionides* 63 (cameo); *Köln* 288 (cameo); *MMA* 304

(carnelian), 614 (glass cameo); *Munich* I/2 849 (carnelian); Münz. u. Med. 379, June 1976, 81 (red jasper), *Palestine* 44 (sardonyx), Sonderliste K, cameo, Sonderliste T. Oct. 1981, paste in child's ring; *Naples* II, 114 (cameo); *Sofia* 148, 149 (carnelian), 320 (cameo); Svoronos 917, 918 (stones); Sternberg XXIX, 30/31 Oct. 1995, 952 (engraved gold bezel; Frank Sternberg 7, Aug. 1995, 408 (cameo); Sternberg 10, June 1998, 726 (banded agate); *Wien* III, 2460 (cameo); *Xanten* I, 10 (paste). First century A.D. Osborne, pl. xxiv, 9. 35794.

**25. *Eros Mourning with the Club of Hercules.*** Red jasper. 1.2 x 0.9 x 0.1. F1. Traces of iron ring on reverse.

Eros faces naked and sleeping with his legs crossed. With his right hand he holds the narrow end of an inverted club; the broad end rests on a platform or altar. Eros's left arm is bent so that his elbow rests on the upper end of the club; he holds his chin in his left hand. Ground-line.

*Beschreib.* 8205 (nicolo); *Hamburg* 56 (nicolo); *Munich* I/1, 548 (amethyst), 1/3, 2554 (carnelian).

First century A.D. 35537.

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## A FATIMID AMULET-BOX WITH EUROPEAN AND ISLAMIC COINS FROM THE ELEVENTH CENTURY

(PLATES 6–7)

Robert KOOL

Almost 30 years ago D. M. Metcalf published in this journal a group of 17 looped European deniers dating to the late eleventh or early twelfth century, many of them worn (Metcalf 1975:139-41). The coins were recognized by him as a hoard. It contained one of the earliest groups of medieval European currencies found in the Latin east and was thought to be related to events surrounding the First Crusade. Recently though, we have been able to establish that these looped coins, bought by the Kadman Numismatic Museum in Tel Aviv in the 1970s, in fact belong to a larger yet unpublished hoard of coins and jewelry related to the Fatimid period, presented here for the first time.

In 1994, while examining excavation diaries stored at the Israel Antiquities Authority in Jerusalem in preparation for the publication of the coin finds of Pilgrims' Castle (Metcalf, Kool, and Berman, 1999: 89-164) we accidentally discovered a group of unpublished notes from the late 1930s describing a Muslim amulet-box accompanied by medieval European and Muslim coins.<sup>1</sup> Its author, the archaeologist

<sup>1</sup> See our reference to the hoard in G. Glücksmann and R. Kool (1995:95). We sincerely thank A. Rochman, Head Archivist of the IAA for permission to consult C. N. Johns's excavation files.

C. N. Johns,<sup>2</sup> noted that the artifact belonged to an extensive collection of Muslim jewelry owned by John D. Whiting, resident owner of the American Colony Hotel in Jerusalem, which disappeared without a trace on Whiting's return to the United States in the 1950s. Fortunately Johns's detailed notes on the objects survived together with some well preserved photos of the amulet-box and a selection of coins thus providing us with a reasonable idea of the content of the hoard.

However, while preparing a note on this discovery, new information suddenly emerged which enabled us not only to retrieve many of the lost hoard objects but also to reconstruct its original content. A conversation with the last residing descendant of the Whiting family in Jerusalem revealed that part of the antique collection had apparently been deposited in a museum in New Mexico, in the United States.<sup>3</sup> After a number of inquiries we indeed discovered the amulet-box in the collection of the Museum of International Folk Art in Santa Fé, sixty years after it was last seen by Johns.<sup>4</sup>

Unfortunately the amulet-box was not accompanied by any of the coins described by Johns. But here we made a second discovery: while studying the coins it became clear that they had a striking resemblance to some of the specimens in the Kadman necklace hoard described by Metcalf. Both hoards contained not only similar looped types of the relatively numerous Chartres coins but also exactly the same types of very rare deniers minted in Rheims and Pavia.

<sup>2</sup> These formed the basis for Johns's articles published in the *Quarterly of the Department of the Antiquities of Palestine* on the excavations at 'Atlit during the years 1932-36.

<sup>3</sup> Personal communication by Mrs. V. Verber in April/May 1997. John Whiting sold most of his substantial collection of antiquities to Yale University where they are preserved in the "Whiting Collection of Palestinian Pottery." This collection, the fruit of over half a century of buying and collecting, contains over 900 objects—mainly pottery and lamps but also a few pieces of gold Muslim jewelry. See C. A. Kennedy, "The Development of the Lamp in Palestine," *Berytus* 14 (1961-63), p. 66, n. 1. We are indebted to D. Barag, Institute of Archaeology, Hebrew University, Jerusalem for this reference.

<sup>4</sup> We are grateful to Dr. F. J. Korom, Curator of the Asian and Middle Eastern Collections for assisting us in tracing the amulet-box in the museum's collection. The amulet-box entered the museum's collection as FA.1981.48.34 under a long-term loan in 1981.

<i>Coin Type</i>	<i>Kadman Hoard</i>	<i>Whiting Hoard</i>
Orleanais, Chartres	12	25
Champagne, Rheims	1	1
Poitou, Melle	1	2
Italy, Pavia	1	1

Fig. 1. Comparison of Similar Types in Kadman and Whiting Hoards

To our surprise, comparison of the photo taken by Johns in 1937 depicting a selection of eight coin obverses and reverses (Plate 7, C-J) with the coins of the Kadman hoard<sup>5</sup> clearly showed a looped Ottonian denier minted in Pavia in the tenth/eleventh century (see the description of 34 below) to be not just the same type, but one and the same specimen (Plate 6, 1 with Plate 7, I) Further comparison proved the same for a denier of Melle (28-29, Plate 6, 2 with Plate 7, F). Also the description of an even rarer feudal denier of Count Eudes II, 1019-37, minted at Rheims, Champagne with retrograde inscriptions (26) strikingly matched the specimen published by Metcalf (1975:140, 1; Plate 7, 15). There is no doubt that the 17 coins of the Kadman hoard in fact originally belonged to the Whiting amulet-box and coin hoard.<sup>6</sup>

### PROVENANCE

From Johns's notes we learn that Whiting received the amulet-box with the coins in January or February 1917 from a resident of the village of A-Tūr, located on top of the Mount of Olives in Jerusalem. This man alleged he had found the hoard buried in a copper pot near

<sup>5</sup> The photo was traced by us to the IAA photoarchive (14.593) where it is described as "coins from necklace attached to talisman in possession of Mr. Whiting, American Colony." It accompanied another two photos of the obverse and reverse of the amulet-box (14.592/4) published on plate 1. The four coins published by Metcalf are K-8759, K-8753, K-8749, and K-8754. We thank C. Meir, curator of the Kadman Coin Collection, Tel Aviv for allowing us to consult the hoard once more.

<sup>6</sup> This is further strengthened by the circumstances in which the 17 coins of the Kadman museum hoard were purchased. They were bought in 1974 from the antique shop of the American Colony Hotel (personal communication from Dr. A. Kindler, December 28, 1997).

Amman. The account is plausible but difficult to confirm. Indeed, the hoard could have been easily transported to Jerusalem since the road from Amman to Jerusalem was still accessible despite worsening travel conditions connected to the 1917 British military offensive to drive the Turkish forces from Palestine.<sup>7</sup> On the other hand, no description of this “pot” survives. More important, the question arises as to the possibility of finding such a sophisticated piece of jewelry with European coins, obviously the property of an important person, in the territory east of the Jordan River which lay outside the orbit of Fatimid rule.<sup>8</sup> It is more feasible that such an amulet-box, either produced in Egypt or by a local workshop, was destined for a more sophisticated Fatimid urban environment like Ramla, Jerusalem, or one of the coastal cities.<sup>9</sup> The presence of rare European billon coins predating the First Crusade further strengthens this scenario as coins like these were much more likely to originate from a location where substantial numbers of European pilgrims or traders were present—like Jerusalem—whereas the territory east of the Jordan River remained far removed from European itineraries until the 1140s.<sup>10</sup>

<sup>7</sup> British forces captured Jerusalem and its surroundings nine months later, December 9, 1917.

<sup>8</sup> Gil's account of the stages of the Fatimid conquest of Palestine (1992:335-408) does not indicate any significant activity by the Fatimid forces east of the Jordan River. The territory was dominated by Bedouin tribes occasionally collaborating with the Fatimid host, at other times raiding Fatimid Palestine. Fraenkel (1979:86-108) also notes the importance of Bedouin occupation in the southern areas east of the Jordan River. According to archaeological evidence Amman was sparsely settled during the Fatimid period. Apparently the city and its surroundings gradually declined between the Umayyad and Ayyūbid periods (Dayyah, et al. 1991:366). Still, several rare Geniza fragments from the eleventh to thirteenth centuries (Bralawsky 1954:207-9) tell of Jews settling in Amman as early as the eleventh century. The Muslim historian Muqadassi, writing ca. 985, categorized Amman as a town with its own market, mills, and mosque, lying in a district rich in grain and flocks. However, he underlined its provincial character, noting its cheap living, lack of roads, and illiterate inhabitants who were for the most part Bedouins taking refuge from the nearby desert (Muqadassi 1896:56).

<sup>9</sup> Asker (1998:174-75) noted that artisans working with metals usually concentrated in large urban trade centers.

<sup>10</sup> Crusader sovereignty was nominally extended over this region in 1115/6 when King Baldwin I built the castle of Montreal (Shubak) and drove with his forces down

## THE AMULET-BOX

The amulet-box was made of silver near the end of the tenth or early eleventh century. The case is made of a cut, stamped sheet, soldered in several places and is 7 cm high, 8 cm wide, with an irregular depth ranging from 17 mm to 21 mm to 15 mm. Both sides of the shield-shaped container consist of a central panel decorated with floral designs in repoussé, surrounded by Qura'nic verses on three sides with a scroll design on the outer band. Four loops, paired on the left and right with one missing, are soldered to the top, which is open in the center. The inscription on what was probably the facing side (Plate 6, A) is

/	بسم الله قل هو الله احد	In the name of God,
/	الله ه الضمد لم	Proclaim: He is Allah, the Single, Allah the
		Eternal. He begets not,
/	يلد ولم يولد	nor is He begotten
	The reverse reads (Plate 6, B)	
/	الله لا اله الا هو احي	Allah is He beside Whom none is worthy of
		worship,
/	القيوم لا تاحده	the Ever-Living, the Self-Subsisting and All-
		Sustaining.
/	سنة و لا نوم	Slumber seizes Him not, nor sleep.

Similar amulet-boxes frequently contained parchment inscribed with passages usually taken from the Qur'an for protection against the evil eye. They were worn on a chain around the neck or on the upper arm. The tradition of amulet-boxes dates back to the Fatimid period. A similar specimen with an identical Qur'anic inscription was published by Hasson (1987:88, 118) in her study of Islamic jewelry.

The description of the amulet-box does not specifically identify the jewelry's origin although it is clearly of the Fatimid period and the calligraphy is of high quality. The quality of the silversmith's work suggests a major urban center of production like Damascus or Egypt. The European coins which supposedly were attached to the amulet-box

to the Red Sea. However, substantial crusader control over the area was only established from the 1140s onward with the building of a range of fortresses (Kerak, Semoia, Li Vaux Moise, Taphila, Hormoz, and Celle ).

possibly indicate that this piece of jewelry was in use locally. The Fatimids consistently prohibited the entry of foreign currencies into Egypt and when they appeared they were melted down and converted into local silver and gold currency. Possibly these restrictions were applied less stringently in Palestine and Syria where the existence of these tenth and eleventh century European coins parallels the growing number of pilgrims visiting the Holy Land during this period.

The inscription is in Kūfic script of the foliated type used frequently in Egypt and Palestine. The form of the Kūfic dates the amulet-box to before the beginning of the twelfth century which is when naskhī script began to be used more extensively under the Ayyūbids in Syria and Palestine (Grohmann 1957:183-213; Sharon 1995:75; Sharon 1997:163-83). The script is of high quality, obviously the work of a first-class artist.<sup>11</sup> The calligraphy is carefully executed with well-proportioned letters and spacing, evenly distributed over the surface of the amulet. The use of similar Qur'anic verses on amulets is well attested (Hanson 1987:25). Many of the letters executed in thick style are elaborately decorated with annulets.

Inscription A is possibly the front of the amulet-box, the side visible for the on-looker since it starts with the bism Allāh. The inscription is from the Sura *al-Ikhas* 112:1-5. Its first line omits the last two words of the Bismillah al-Raḥmān al-Raḥīm wa-lam yakun lahu and in the third line of the phrase the closing is missing, Kafw<sup>an</sup> aḥad. This verse was widely used from the Ummayyad period onward in monumental inscriptions as well as on smaller objects (Wiet, Houary, Rached 1932; Grohmann 1962:4-29).<sup>12</sup> It appears on the outer face of the octagonal arcade of the Dome of the Rock built by 'Abd al Malik ibn Marwan in 691/2 (72 AH).<sup>13</sup> Likewise on smaller

<sup>11</sup> I am greatly indebted to E. Khamis, Institute of Archaeology, Hebrew University, for his expert comments on the epigraphy of the amulet.

<sup>12</sup> Wiet, Houary, and Rached (1932, vols. 1-6) enumerated more than 160 inscriptions with the verse. Its frequent use on epitaphs is attested on tombstones in Egypt and near Mecca from the eighth century onward (Grohmann 1962:4-29).

<sup>13</sup> The inscription forms part of a 128 meter long inscription band running along the upper edge of the intermediate arcade above the arches, ca. 10 m. above the ground. Sura 112 is part of a number of Qur'anic inscriptions decorating six parts of the building proclaiming the fundamental principles of Islam (Van Berchem

objects it appears from the late seventh century onward, and 'Abd al Malik ibn Marwan introduced the verse on his gold and silver post-reform coinage from 696/7 onward (Walker 1956:84 ff.).<sup>14</sup>

The inscription on side B contains a small part of the Qur'anic verse *al-Kursi* (chapter 2, Sura 256). Here the entire opening with the Bismillah is missing and only the first sentences of the sura are tooled on the amulet-box. Like the suras *al-Nās* and *al-Falaq*, this sura proclaims the greatness of God and supposedly protected its wearer. The verse appears with five other Qur'anic verses on the east gate of the Haram dating to the end of the seventh century (Grabar 1959:33-62). Also this verse appeared frequently on epitaphs and wooden panels dated to the Tulunid era, beginning in the ninth century (Wiet, Houary, and Rached 1932; Weill 1931:43-59).

### THE COINS

Comparison of Johns's notes with Metcalf's publication allowed us to establish that the amulet-box was found with approximately 44 coins. The catalogue below incorporates both the coins identified by Metcalf (1975:139-41) and the new unpublished material based on Johns's notes from 1934. The question mark indicates the two coins Johns listed as "unidentified coins."

	<i>Kadman Hoard</i>	<i>Whiting Hoard</i>
Orléanais, Chartres	12	25
Champagne, Rheims	1	1
Champagne, Troyes and Meaux	—	1
Poitou, Melle	1	2
Poitou, Melle (obole)	—	1
Languedoc, Melguiel	—	1
Maine, Le Mans	2	2(?) "unidentified coins" mentioned by Johns
Carolingian, Tours		1

1927:229-30; Comb, Sauvaget, and Wiet 1931:22). For the significance of the inscription see Grabar (1959:33-62; 1996:65-71).

<sup>14</sup> The verse appears also on a wooden frieze from Fustat dated to the beginning of the ninth century (Weill 1931:65, 6854).



Carolingian, German Lands		1
Italy, Pavia	1	1
Muslim coins	—	8
<i>Total</i>	17	44

Fig. 2. Comparison of Kadman and Whiting hoard

## DESCRIPTION OF THE COINS

**1-25.** Chartres, 25 coins. Obv. stylized “Chartrain type” with crowned head in profile r. Rev. cross patée with circle of dots +**CARTIS CIVITAS**.

This group of coins, of which only 15 recorded examples survived (Plates 6, 3-5; 7, 6-14), formed the predominant part of the hoard. Metcalf recorded 12 specimens of this type in the Kadman collection of which only two appeared on his plates (Metcalf 1975:140, 14-15). Johns studied 20 of the 25 coins and concluded that they formed a homogenous assembly, but none were of the same die. Several of the coins were of the three bezant-type in the field instead of two. These coins commonly referred to as the “Bléso-Chartrain” type were introduced in the unified county of Chartres and Blois during the first two decades of the tenth century. The above specimens apparently belonged to the more schematic anonymous “Chartrain” subtype with only the mint or comital title inscribed, circulating from the end of the eleventh century until the early thirteenth centuries in the eastern Mediterranean (Glucksmann and Kool 1995:93-96).

**26.** Champagne, Rheims, eleventh century, 1 coin. Obv. crowned head facing +[ODO COMES]. Rev. cross pattée [+]**IO[DIO] COES**.

Johns’s attempt to read the retrograde inscription **IV...EOIWES+** of this rare coin differs from Metcalf’s later identification (Metcalf 1975:140, 1; Plate 7, 15). Johns’s notes however clearly indicated that this is the same coin. The name of Count Eudes II (1019-37) is repeated on both sides in retrograde which according to Metcalf excludes the possibility of a later dating of this coin.

**27. Champagne, Troyes, and Meaux, 1 coin. Obv. monogram +MELPIS CIVITAO. Rev. cross pattée TRECA(S) CIVI.**

The obverse of this coin appears on the photo taken by Johns in 1937 (Plate 7, G) and is described in detail in his notes. The coin, from the combined mint of Troyes and Meaux, is dated to between the tenth and the beginning of the eleventh century (Poey D'Avant 1862:261, 6038). The obverse portrays a "degenerated" Carolingian monogram belonging to the early anonymous period of the Troyes mint. Coins associating two mints occur in other places in the Champagne region during the tenth and eleventh centuries, such as Provins-Sens and Crépy-Troyes. Possibly the occurrence of associated mints was connected to a seigniorial-administrative arrangement or simply the desire on the part of a feudal ruler to extend the circulation of the issue. In France these coins had a relatively wide circulation and were even found as far as Rome (Duplessy 1985:267, 342, and 362).<sup>15</sup> In the east comparable types of coin appear in only one other hoard. The Istanbul hoard, deposited ca. 1096 and described by Melchior de Vogue in 1875, contained four deniers from Troyes and Crépy-Troyes which in French hoards, are usually found with the Troyes-Meaux coins.<sup>16</sup>

**28-29. Poitou, Melle, 2 coins. Obv. cross patée +CARLUSREXR. Rev. MET/ALO in two lines.**

Johns correctly identified two coins of the above type and photographed the obverse of one of the specimens (Plate 7, F). Metcalf saw only one specimen in the Kadman hoard which was not included in the plates. We re-examined this coin at the Kadman Museum (8750; Plate 6, 2)

<sup>15</sup> Duplessy 1985 mentioned three hoards with such coins—the Puy hoard with 3 deniers, the Sceaux-du-Gatinois hoard with 15 deniers, and the Troyes hoard with 39 deniers. All these French hoards are dated from the end of the tenth to the beginning of the eleventh century. The specimen found in Rome was discovered in the vicinity of St. Peter's. We thank F. Dumas for generously providing this information.

<sup>16</sup> We wish to thank M. Dhenin, Curator of Medieval Coins, Département des Monnaies at the Bibliothèque Nationale de France for providing this information.

and concluded that it was the same specimen appearing in Johns's photo. These immobilized types, introduced under the counts of Poitou, date to the second half of the tenth up to the twelfth century (Grierson and Blackburn 1991:239-40). The type had a large circulation in twelfth century France and was mentioned by the chronicler Raymond de Aguilers as one of the seven "preferred currencies" used during the First Crusade. Existing hoards with this coin type are usually found on the land route towards the Holy Land, leading from Albania to Byzantium and then via Asia Minor, either pre-dating or dating to the events surrounding the First Crusade (Metcalf 1995:3-19).<sup>17</sup>

**30.** Poitou, Melle, 1 obol. Obv. Karolus monogram with chevron in center. Rev. cross patée **METVLLO**.

This coin did not resurface with the Kadman Hoard nor was it photographed by Johns. If our reading of Johns's handwritten notes and drawings are correct this obol's monogram contains a chevron which would correspond with an early coin type minted under the Carolingian King Charles the Bald (840-77). This coin was reissued by successive Carolingian kings as a *type immobilisée* till the mid-tenth century (Grierson and Blackburn 1991:544, 934, pl. 42).

**31-32.** Maine, Le Mans, 2 coins. Obv. monogram of Ebertus **COMES CENOMANNIS**. Rev. cross with dot in first and second quarters, **A** and **W** in third and fourth, **SIGNUM DEI VIVI**.

Johns did not describe these coins in detail but presumably these are the coins he referred to in his notes as belonging to the tenth century. Both coins were identified by Metcalf as part of the Kadman Hoard but not included in his plates (Metcalf 1975:140; Plate 7, 16-17).

<sup>17</sup> The hoards are Skhodër, Albania, tenth century, 6; Istanbul 1875, ca. 1096, 39; Amaysa, Turkey, ?; Izmir 1968, ca. 1140s, 2.

- 33.** Robert I King of France (922-23), Tours, 1 coin. Obv. monogram **ROBERTUS R[E]X**, surrounded by inscription **MISERICORDIA DEI**. Rev. cross patée **TVRONVS CIVITAS**.

This rare coin was only studied by Johns in the thirties and did not resurface with the Kadman necklace described by Metcalf. Johns correctly identified it as a coin from the short reign of Robert I, king of the West Franks, 922-23. Johns's photo of the obverse monogram (Plate 7, H) enabled us to corroborate his conclusion. This crudely styled and extremely rare coin resembles the monogram type minted by Odo, king of the West Franks, 888-97. However the monogram clearly reads **R(OBERTUS)** and not **(O)D(O)**<sup>18</sup> ruling out the possibility that it is either a coin by Odo or a copy of Odo's **MISERICORDIA** type issued posthumously between the reigns of Louis IV, 936-54, and Hugh Capet, 987-96 (Dumas 1980:219; Dumas 1981:101-6). Grierson and Blackburn (1986:244-46) contest this identification maintaining that Robert I did not issue coins and that the monogrammed coins attributed to his reign are either a misreading of Raoul, 923-36, or forgeries. However the above type clearly has an **R**, not **D**, unlike the types presented by Grierson and Blackburn (1986:548, 986). Furthermore Dumas has convincingly argued that Raoul used exclusively the cross-shaped monogram introduced by Charlemagne and not the Oddonian box monogram.

- 34.** Italy, Pavia, Otto I and Otto II, 962-67, 1 coin. Obv. **OTTO** monogram, around **+IMP[ERATOR]**. Rev. **PA/PIA** around **[OTTO] PIVS RE**.

This coin was provisionally identified by Johns in the thirties as dating to the tenth century. Comparison of a photo of its reverse (Plate 7, I) with coin 17 appearing in Metcalf's article of the Kadman Hoard clearly shows that this is one and the same coin (Plate 6, 1). Metcalf identified the coin as a denier minted in Pavia in the 960s during the reign of the Holy Roman Emperor Otto I or Otto II. Only

<sup>18</sup> Coins with **R** monogram usually appear with thick and straight **I** like the above exemplar (Gariel 1885:pl. 48, 3-6). We thank F. Dumas for explaining the existing variations of this Carolingian-period monogram and the possible interpretations.

one registered parallel from the Latin east exists, a stray-find from Antalya (Metcalf 1972:467, 3, pl. 18, 27.

- 35.** Carolingian Temple immobilized type, eleventh century, German Lands(?), 1 coin. Obv. tetrastyle temple with cross TET[.]ERTT[...]. Rev. cross pattée with four letters CIVE and debased inscription LXES RVRCE[...].

This coin was only seen by Johns who could not identify the coin but included a photo of the obverse in his notes (Plate 7, J). Inscriptions on both sides are written in retrograde. Similar types were minted during the eleventh century in south German cities like Esslingen (Nau 1961:54).<sup>19</sup>

- 36.** Melgueil, 1 coin. Obv. four annulets, around [NARBONV ]. Rev. cross pattée around [RA]MV[—].

This coin was also only examined by Johns in the thirties and did not reappear in the Kadman hoard. The coin circulated widely in southwest France during the twelfth and thirteenth centuries (Poey d'Avant 1860:3838-41; Duplessy 1985:157). It was one of the seven "preferred" European coinages popular during the First Crusade. Specimens still appear in hoards dated to the 1170-80s (see Tables 1-2).

Associated with these European coins are eight Islamic silver coins (dirhams or fractions). All, except one possible intrusive Abbasid specimen (808/9), date to the second half of the ten and eleventh centuries. This group of coins was identified in the thirties for Johns by L. A. Mayer, the distinguished Arabist but no transcriptions or photos of their inscriptions have survived. The references below are based on Mayer's identifications.<sup>20</sup>

<sup>19</sup> Our thanks to A. M. Stahl, Curator of Medieval Coins at the American Numismatic Society for providing this reference.

<sup>20</sup> The notes from the late 1930s contain a handwritten letter of Mayer to Johns with the identifications.

37. Abbasid, al-Amin, Madīnat Balkh, 193 (808-9), 1 coin. Cf. Nicol, el-Nabarawy, and Bacharach 1982:1003.
38. Ikhshidid, Abu'l-Qāsim Unūjūr bin al-Ikhshīd, 334-49 (946-61), with Caliph Al-Mutī'lillāh, 334-63 (946-73), 1 coin. Date and mint are obliterated (Illisch 1993:36, 387).
39. Ikhshidid, Al-Muttaqī billāh, 329-34 (940-44) and Abu'l-Mansūr, Madīnat al-Salam, 330 (941), 1 coin. Cf. Lane-Poole 1877:170, 477.
40. Fatimid, Abū Mansūr Nizār al-'Azīz billāh, 366-86 (976-96), 1 coin. Date and minted obliterated. Cf. Miles 1951:16-17, 124.
41. Fatimid, Abū 'Alī al-Mansūr al-Ḥākim bi-Amr Allāh, 386-411 (996-1021), Miṣr, 406 (1014-15), 1 coin. Cf. Miles 1951:22-23, 176.
42. Fatimid, Abu'l-Hasan 'Alī Al-Ẓahir li-'Izāz Dīn Allāh, 411-27 (1021-36), Miṣr, 424 (1032-33), 1 coin. Cf. Miles 1951:28-29, 257.)
- 43-44. Unidentified, 2 coins.

#### DATING THE HOARD

All coins were looped indicating their secondary use as jewelry. This and the worn condition of most of the coins indicate that a certain period, possibly several years, elapsed between their last use as currency and their integration into the amulet-box, but it is impossible to pinpoint exactly how much time this was. A possible terminus post quem for its conversion to jewelry can be suggested by the latest datable European and Muslim coins, a Fatimid silver dirham of al-Ẓahir minted in Cairo in 1032/33 which is closely followed by a denier from Rheims dated 1037. Possibly then, the Muslim silver coins were already in the possession of the silversmith when he acquired the European coins sometime after the 1040s. Consequently, the amulet-box could have been assembled somewhere in the second half of eleventh century and presumably buried near the time of the Seljuk conquest (1070) or the First Crusade (1099).

## COMPARING THE HOARD

Hoardings from the Fatimid period that combine silver jewelry and coins are rare in the eastern part of the Mediterranean. Few have been documented (Kool and Arav 1997:258-59). Of the ones found in the area of the Frankish Kingdom, only one from Tiberias containing 18 pierced silver half dirhams and an assortment of bracelets, rings, and beads discovered in a juglet has been fully published (Brosh 1998:1-9; Wasserstein 1998:15-22). All contain exclusively Muslim coins and were concealed at the end of Fatimid rule and the beginning of the First Crusade. This makes our hoard, combining Fatimid jewelry and European billon money virtually unique in this region. The closest parallel is the tradition of wearing coin brooches which existed in Norman Sicily and Apulia (twelfth century), a region heavily influenced by Fatimid culture (Lightbown 1992:105).<sup>21</sup> No such examples have survived from the Kingdom of Jerusalem where apparently Frankish settlers remained faithful to European fashions. A few hoards of silver jewelry and European and Muslim money exist but they date much later to the Mamluk and Ottoman period (Kool and Arav 1997:259-60). A comparative analysis of the contents of the Whiting hoard with French feudal currency hoards found in the Balkans and the Latin east (Tables 1 and 2) strongly indicates that also the European deniers in the hoard circulated in the area before the First Crusade.

Among the 14 hoards with French feudal coins dated to the twelfth century found in the territory of the Latin Kingdom, only six contain feudal coins other than the "preferred" currencies issues. Of these only two are dated before the 1150s, the Beirut Hoard with eleventh century Norman coins dated to before the First Crusade and the Hoard from the Sea (before the 1150s) with coins from Normandy, Poitou and Vienne. The four remaining hoards, dated to the second half of the twelfth century, all contain coins from Vienne and there is

<sup>21</sup> Large quantities of Fatimid jewelry reached western Europe after the dispersal of the Fatimid treasure in 1061-69 during the reign of al-Mustansir (1036-94). Thereafter, Fatimid jewelry captured by the Crusaders as spoils of wars was transported westward and often donated to church treasuries (Shalem 1998:227-28).

Paphos	c. 12 <sup>th</sup> (?)
Izmir	c. 12 <sup>th</sup> c.
Corinth, 1971	c. 1100
Corinth, 1905	c. 12 <sup>th</sup>
Barbarossa	c. 1190/ Third Crusade
Samos, Greece	c. 1182
Salamis, Cyprus	1075-1099
Croatia	1095-1130
Istanbul, 1875	1096(?)
Corinth, 1907	1095-1100
Nis, Serbia	1000-1050
Northern Yugoslavia	End 11 <sup>th</sup> -12 <sup>th</sup> c.
Sköder	10 <sup>th</sup> c.
Chartres	x
Melle	x
Le Mans	
Le Puy	x
Melguiel	
Lucca	
Valence	
Limoges	x
Albi	x x
Amiens	x
Beauvais	x
Clermont	x
Brittany	x
Rouen	
Champagne, Troyes	
Champagne, Provins-Sens	
Lyon	
Crepy-en-Valois	
Normandy	
Gien-Dozy	
Dijon	
Auxerre	
Tonnerre	
Meaux	
Tours	
Anjou	
Penthievre	
Souvigny	
Bourbon	
Vienne	
Suse	
Genoa	

**Table 1. Hoards with European money discovered in the Balkans and Asia Minor.**



[illegible]

**Table 2. 'Preferred Currencies' in Whiting Hoard and Other Hoards from the Latin East.**

one coin from Celles (Jerusalem YMCA Hoard). In contrast, the Whiting Hoard contains a relative rich variety of French feudal currency. Beside four of the "preferred" currencies, it contains another five different feudal coins all dated to the tenth and eleventh centuries. Also, it contains no Vienne coins. It becomes therefore difficult to argue on the basis of this evidence that the Whiting Hoard belongs to the period of the Crusades unless we date its deposit to the twelfth century.

The “preferred” currencies, especially those of Valence and Lucca, are found in coin hoards of the Latin Kingdom up to the Battle of Hattin (1187). Their main period of distribution falls in the first half of the twelfth century. In contrast, seven of the hoards discovered in the Balkans and Asia Minor which are prior to 1098 contain only

sporadic traces of these coinages and no coins from Lucca and Valence at all (Metcalf 1995:3-11). The Whiting Hoard clearly parallels in this respect the earlier Hoards found in Asia Minor.

The other "preferred" currencies in the Whiting Hoard are earlier types than the ones usually found in similar hoards. Among the coins of Melle is an obole dating to the tenth century. Relatively large numbers of similar early coins from Melle are noted in two hoards. One is from Sköder, Albania, and has six coins, all dated to the tenth century and the other is from Istanbul (1875), also a traveler's hoard, with 39 coins deposited no later than 1096 (Metcalf 1995:4-6). Very few coins of Le Mans have been found in the east, despite their inclusion by Raymond of Aguilers among the currencies of the First Crusade. There are none among the hoards found in the Balkans and Asia Minor and only two in the Latin east. The first, the Antioch hoard, has been dated provisionally to the capture of Antioch by the crusaders in 1098 but its definition as a traveler's hoard leaves room for an earlier dating.<sup>22</sup> The coin of Le Mans in the first Subak Hoard is of a later variety (1110-49) than the specimen in the Whiting Hoard. Also the number of stray-finds of this coin found in the territory of the Latin Kingdom are extremely small and difficult to date.<sup>23</sup>

Uniquely, the Whiting Hoard contains two Carolingian coins while none of the other hoards dated to the period of the Crusades contains any Carolingian currency.

## CONCLUSION

In spite of its rarity could it be that the presence of Carolingian and early French feudal money constitutes more than an accidental grouping of European and contemporary Islamic coins? Relatively

<sup>22</sup> Metcalf (1995:309) noted that the hoard awaits further study beyond its original publication (Weber 1934; Waage 1952:171).

<sup>23</sup> Among the Jerusalem Citadel excavations (unpublished) is one regular but difficult to date type. In Antioch one coin described as P/A 1553 (either a regular type of Herbert I or an immobilisée type) was found (Waage 1952:171,2318). At Caesarea one type (P/A 1561) dated by Metcalf to the thirteenth century was found (Metcalf 1987:102, 62).

little is known about the types of silver coins circulating during the Fatimid period and the beginning of the Crusader settlement, not in the least due to a lack of systematic numismatic data from excavations. Nevertheless, a growing body of research in the field of economic history and numismatics nowadays agree on a number of conclusions with regard to the use of silver during this period. First, the silver crisis or silver famine of the tenth and eleventh centuries was far less radical than first presumed (Bates and Metcalf 1989:421-81). Contemporary economic documents clearly show that silver played a far more important role in daily transactions in the Fatimid economy than was previously thought. Letters and contracts from the Cairo Geniza explicitly state the rate of exchange of silver and gold, describe transactions of exchange of silver and gold money, and even prove that trade with western Europe was paid with silver ingots and silver ornaments (Goitein 1965:1-46).<sup>24</sup> Second, new hoard evidence and the accumulation of new types show that small size silver dirhams and the use of billon and imitations was far more widespread in Fatimid Egypt and Syria than was previously assumed.<sup>25</sup> Scholars now recognize that this was not as a result of a lack of silver or the exclusive use of gold dinars among the Fatimids but in effect expressed a growing need for fractional coins for daily transactions in the Fatimid economy which was becoming increasingly monetized (Cahen 1984:208-17). Also the influx of a billon standard was encouraged by growing contacts and trade with western Europe during the tenth and eleventh centuries before the Crusades (Lopez 1987:306-401). These contacts not only resulted in a reciprocal flow of luxury goods for slaves and raw materials like timber and iron, but also the movement of silver eastwards (Spufford 1988:68-73).

<sup>24</sup> Goitein noted that the exchange rate between low silver (30%-70%) dirhams and the gold dinar was about 40:1.

<sup>25</sup> For imitations see Nicol (1988-89:58-70). Bacharach (1980:83-92) illustrated the widespread use of silver to pay locally raised troops, as opposed to Fatimid troops in North Africa who were paid in gold. Illitsch 1993 gives a more recent enumeration of types. Further proof of the use of fractional silver in eleventh century Palestine includes a hoard of 18 half dirhams discovered during a salvage excavation in Tiberias (Wasserstein 1998:9-22).

Of course it remains difficult to suggest, on the strength of a single hoard, that western European billon deniers reached Fatimid Egypt and Syria in substantial numbers in the wake of silver bullion flowing east. It is important to remember that with the increasing contacts of people and goods from the second half of the tenth century between western Europe and the Fatimids, most of Fatimid controlled Palestine did not share the same scale of international economic prosperity enjoyed by the Nile region (Abulafia 1987:402-43). Its economy though not unprosperous was more regionally oriented (Yusuf 1985). It seems therefore prudent to suggest that until the discovery of more mixed European and Fatimid hoards the Carolingian and French feudal coins in the Whiting Hoard originated with European pilgrims who in increasing numbers visited the Holy Land in the eleventh century.

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## FROM REGIONAL TO NATIONAL GOLD CIRCULATION PATTERNS: THE EVIDENCE OF THE HULL, TEXAS (1936) HOARD

(PLATES 8)

John M. KLEEBERG

### 1. The Discovery of the Hoard

In 1936, a hoard of nine double eagles (\$20 gold pieces) was found buried beneath an old barn in Hull, Liberty County, Texas (Fecht 1937; see Kays 1998 for an explanation of why barns are good locations for hiding and preserving valuables). Hull is a stop on the Missouri Pacific Railroad, 50 miles from Houston. It is an area of eastern Texas with pine-covered hills and cypress swamps, resembling the South in its agricultural economy as primarily cotton and rice are grown there. A Spanish mission called Nuestra Señora de la Luz was established on the site of what is now Liberty in 1756. This makes Liberty the third oldest town in Texas, after Nacogdoches and San Antonio. Liberty was founded in 1831 and incorporated in 1837. Liberty County was organized the same year, with Liberty as the county seat (Pickett 1936, 1, 95). In 1858 the population of Liberty County was 651 of whom 189 were black slaves (Pickett 1936, 116). Antebellum Texas was a thinly settled, cash-poor region, and much of the coinage in circulation was foreign. When an English mercantile house, Jones & Company, bought cattle at Liberty in the 1840s, they



paid in British gold (Pickett 1936, 45). The influx of "Yankee gold," as documented by the Hull hoard, is a postbellum phenomenon.

A. J. Hartel, the president of the State Bank of Hull, acquired the hoard and sold it on January 13, 1937 to Arthur J. Fecht, a geophysicist associated with the McCullen Exploration Company who pioneered the use of seismographic techniques in petroleum exploration (Obituaries 1946; Fecht Collection 1980). Fecht had been notified of the existence of the hoard by R. H. Robertson, a U.S. postal inspector of Beaumont, Texas (Fecht 1937-1945).

On examining the hoard, Fecht noticed that one of the double eagles—the 1861-S—had an unusual reverse. The letters were thinner and taller than normal double eagles, and their position was different. This reverse resembled a number of patterns, but collectors of the period did not realize it also appeared on a coin struck for circulation. It was what is now known as the 1861-S double eagle with the Paquet reverse. Fecht published his discovery in the *Numismatist* for March 1937.

This was not the earliest publication of the 1861-S dollar with the Paquet reverse as the difference had been known to nineteenth century numismatists. One of the editors of the *American Journal of Numismatics* (probably Lyman Haines Low) described it ("Varieties 1895" ) in response to a query from WPB of New York, who was almost certainly the coin and stamp dealer William P. Brown (Heaton 1895, 9). But as often happens, the knowledge was lost to a later generation, and when Fecht published the Paquet reverse, it was a novel discovery to the collectors of his time.

Fecht bequeathed his superb collection, including the Hull hoard, to the American Numismatic Society, but with the condition that so long as his sister, Miss Neoma Fecht, lived, title was to rest with her. Fecht died in 1946. In 1948 the collection was transferred from Omaha to the vaults of the American Numismatic Society in New York City, where it was kept separate from the ANS collection proper (Adelson 1958, 277, 283). Miss Fecht was also a very generous donor to the ANS. She died in 1980, whereupon Fecht's collection, including the hoard of double eagles, became the property of the ANS (ANS 1980.109).

## 2. The Partial Publication of the Hoard

There were two further references to the Hull hoard during the lifetime of Miss Fecht. These were both made by Walter Breen. Breen's attention was brought to the hoard because of his research on the Paquet 1861-S double eagle. Breen's first reference to the Hull hoard was just a passing remark in his article in the *Coin Collector's Journal*, where he mentioned the Paquet reverse of the 1861-S double eagle, pointed out that it was part of the Fecht gift to the ANS, and said, "It was found in a hoard in Hull, Texas." He next referred to it in his pioneering "Survey of American Coin Hoards" in the *Numismatist*, October 1952. Breen referred his readers to Fecht's article in the March 1937 *Numismatist*, and then added:

The present owners of this hoard do not wish publication of their holdings at the moment, so that it has not been possible to obtain reliable information on the size or dating of the hoard, or a decent cut of the 1861-S piece with the Paquet die. Complete publication is anticipated at an early date: the mention here in this fragmentary form is simply for the sake of completeness (Breen 1952, 1006-7).

Breen's peculiar silence about the hoard is explained by an exchange of letters between Breen and Sydney P. Noe now in the ANS archives. On 5 March 1952 Walter Breen wrote to William Clark (then ANS curator and photographer), and asked:

Now one other small favor. Will you please find the 1861-S double eagle with the Paquet pattern reverse, in the Fecht Gift, and have it photographed? The prints and the bill go to Stuart Mosher, as this coin is to be illustrated in the NUMISMATIST. The story is simple: the piece was published as coming from a "hoard of double eagles found in a barn in Hull, Texas" in the March 1937 NUMISMATIST, and through oversight I neglected to include this small find in my "Hoards" story in the January 1952 issue. It is, consequently, to be included in a brief supplement describing this and two other hoards that have since come to my attention.

Noe replied on 11 March:

Mr. Clark has passed on your letter asking permission to refer to the "hoard of double-eagles found in a barn in Hull, Texas."

Although the Fecht collection is in our collection it does not become our property until such time as the sister of the former owner passes away. In consequence of this, and because, in addition, when the collection does become ours there will be some importance to publishing this "hoard" - I would prefer that you do not anticipate this eventuality.

Breen answered on 13 March:

The Fecht find of double-eagles (from the Hull, Texas, barn) was published in the March 1937 *NUMISMATIST* but was there merely given a brief mention, as being the source of the 1861-S double eagle with Paquet's rejected reverse. Moreover, that article was briefly referred to in one of my (poorly edited and *garbled* in printing) *Coin Coll. Journal* articles of last year (Sept.-Oct. 1951, pp. 114-15.) Had I known that you had reason for wishing to withhold publication of this coin or the hoard which was its source, I would have omitted to mention it in the *Journal*; but, independent of anything I can do now on learning of your wish in this matter, the two publications already exist. I hope that the harm done, if any, is not serious.

To this Noe wrote back on 19 March, "Yours of 13 March is before me. I note what you say about the Fecht find, and no harm has been done." This explains why Breen gave so few details about the hoard in his article in *The Numismatist* in October 1952 (Breen Correspondence 1952).

Breen's October 1952 article was read with great interest by Abe Kosoff (Kosoff 1952). In 1944, Abe Kosoff and Abner Kreisberg, partners in the Numismatic Gallery, bought Frederick C. C. Boyd's collection of patterns. Among the patterns was a double eagle in an envelope labeled "1861-S \$20 -counterfeit?" Boyd sold the coin to Kosoff at his cost of \$50. After reading Breen's research, Kosoff now understood what he owned. Kosoff would tell a slightly different story in his later newspaper columns, but Kosoff's 1952 letter makes it clear that the episode did not happen the way he remembered it (Kosoff 1952; Kosoff 1981, 67-68; Bowers 1985, 129, 131). Kosoff succeeded in getting the 1861-S with the Paquet reverse listed in the "Red Book." It was first listed in the seventh edition of the Red Book, which came out in 1953. The Philadelphia 1861 double eagle with the Paquet

reverse was listed in the tenth edition of the Red Book, which came out in 1956, which said that there were two examples known (Yeoman 1953, 159; 1956, 159).

### 3. The Contents of the Hoard

The hoard consisted of nine double eagles, with the dates and mint marks 1851, 1855, 1857-S, 1858-O, 1861-S (Paquet reverse), 1866, 1866-S, 1867-S, and 1876. The ANS has photographs made by Fecht at the time, which show all the coins from the Hull hoard. I have compared the coins presently in the ANS trays with the Fecht photographs, and they all match.

The latest coin gives us a date for the closing of the hoard, and the hoard probably was deposited in 1876 or soon after. Since the annual output of double eagles from 1877 to 1883 was greater than ever before, then if the hoard were deposited in the 1880s we would expect it to contain these common dates (Breen 1988, 569-70).

All the coins show traces of circulation—nicks on the cheeks and similar marks, although some are in remarkably good condition, and the New Orleans piece is proof-like, especially on the reverse, with reflective fields. A coin in a hoard should come out of circulation and must therefore be a business strike. The Hull hoard shows that two coins with proof or pattern characteristics did indeed circulate: the proof-like 1858 New Orleans double eagle and the 1861 San Francisco double eagle with the Paquet pattern reverse. Although made as business strikes, New Orleans double eagles often appear proof-like.

The 1876 coin shows some wear on the obverse, in particular ugly gashes on the cheek of Liberty. It has much less wear on the reverse. When the reverse of the double eagle was modified in 1866, the motto **IN GOD WE TRUST** was added, and the outline of the shield became curved rather than straight. The ribbons on which appear the motto **E PLURIBUS UNUM** were also redesigned, so that they were shallower. As a result, the **E** in **E PLURIBUS UNUM** wears very quickly and soon becomes indistinct. Of the double eagles with the redesigned reverse which are present in the Hull hoard, only the 1876 double eagle has a fairly distinct **E**, suggesting that the hoard was closed in 1876 or soon thereafter.

The color of most of the double eagles in the hoard tends towards the reddish, with a blush color. The New Orleans coin, however, is distinctly different in color, being much more yellow. This yellow color is characteristic of New Orleans coins. It is not clear whether this is because of a different gold source or a different alloy. There was a scandal from 1847 to 1853 about debased gold coins at the New Orleans mint with too high a silver content (Taxay 1966, 179-80), but this practice should have ended by 1858.

The most remarkable coin in the hoard is the 1861-S double eagle with the Paquet reverse. The best work on the Paquet reverse remains that of Breen (Breen 1951a, b; Glaser 1959; Bowers 1988, 389-95; Hodder, Ford, and Rubin 1991). The 1988 Norweb catalogue is important for its publication of the different reverse hubs for the Philadelphia and San Francisco pieces (Bowers 1988, 391-92), but the pedigrees given there are inaccurate and have been corrected in a subsequent article (Hodder, Ford, and Rubin 1991).

The story of the Paquet reverse is as follows. In 1859-1860 Anthony C. Paquet modified the design for the reverse of the double eagle. The Mint used this new reverse for regular production in 1861. It was found that 20 coins of the new design would stack too high, which would make it impossible to verify counts. "One of the habitual tests of correctness is, to observe that the piles containing the same number of pieces, of the same coinage, are on an exact level" (Gibbons 1859, 260). This problem could be solved by reducing the size of the rim on the reverse; but this exposed the reverse to excessive abrasion (Breen 1988, 562; Hodder, Ford, and Rubin 1991, 111-12). The Philadelphia Mint telegraphed the branch mints to revert to the old reverse dies. But the telegram to the San Francisco mint only went as far as St. Joseph, Missouri, by wire. From St. Joseph, however, it had to go via Pony Express to Sacramento, California. The San Francisco Mint did not receive the order countermanding the use of the Paquet die until February 5, 1861, by which time it had struck 19,250 double eagles.

#### 4. Hull, Texas (1936) Compared with Other Double Eagle Hoards

Many United States hoards contain double eagles. Double eagles concentrate the most monetary value in the smallest amount of space if you do not keep your money in paper form, which many double

eagle hoarders would not do under any circumstances. Modern hoards are unusual in that it is not only savings hoards which will include double eagles, but also emergency hoards. In the ancient and medieval period, emergency hoards contain the coins in circulation at a time of crisis—you grab what you have, and bury it. Modern emergency hoards are slightly different, because they have coins which often are not in normal circulation. This is because of the role of banks. During financial or political panics, depositors run on the banks and take their money out in hard coin. The best way to withdraw your money is in the form of double eagles. This coin is then concealed in hoards. The Baltimore (1934) gold hoard, which closed in 1856 (Breen 1952), probably represents a panicked withdrawal from the local banks before they suspended specie payments during the financial crisis of 1857. The New York banks suspended specie payments on October 14, 1857, and were followed by the banks of the rest of the country, with the exception of Ohio, Indiana, Kentucky, and Louisiana (Huston 1987, 22-23).

Double eagles do not circulate during normal times, because if they become too worn, banks cease to cash them at their full \$20 value. During normal times, double eagles are stored in bank vaults. Only during times of financial panic are they withdrawn from the banks and kept in the hands of the public.

In the course of preparing an inventory of coin hoards of the Americas, I have come across 49 hoards known to contain double eagles. In the inventory, these 49 hoards make up nearly one quarter of the over 200 hoards with dates of deposit after 1849 and before 1934. The gold hoards in the inventory with dates of deposit after 1849 total 118, so nearly half of the gold hoards are known to contain double eagles. Many of the other gold hoards probably contain double eagles too, but the denominations are not specifically enumerated. Where the find spots are known, they are from the following states (where the number of hoards found is not listed, it may be assumed to be one). I exclude shipwrecks from this enumeration.

Northeast (5): Connecticut, New York (2), Pennsylvania, Maryland  
South (7): South Carolina, Kentucky, Tennessee, Alabama (2),  
Mississippi, Texas

Midwest (15): Ohio, Michigan, Illinois (2), Wisconsin (3), Minnesota  
(3), Iowa, Nebraska (3), "Midwest"

Pacific West (7): California (6), Nevada

Some areas of the United States are not represented: the two states of the Pacific Northwest are not, and with the exception of Nevada, there are no hoards from the Mountain states. This can be explained by those areas' small population, although much depends on the vagaries of how hoards are reported. The Seattle 1929 coin find (Workmen 1929; Bowers 1997, 138-39) almost certainly contained double eagles, but because no denominations are specifically enumerated, I did not include it. The large number of hoards in California is only to be expected, considering that state's area and population and the huge output of double eagles from the San Francisco mint. Somewhat curious is the absence of the New England states, with the exception of the New Milford, Connecticut hoard (Bowers 1997, 136-37). Perhaps the dense urbanization and industrialization of New England, plus its relatively trustworthy banks, meant that fewer people hoarded double eagles, as opposed to the rural prairie states, where banks were few and those that existed were often unreliable. The hoards are more likely to be found in the countryside rather than in the city (although one was found in Baltimore, another in Philadelphia, and a third in Chicago). The only double eagle hoard known to be found within the borders of New York City came from Staten Island—the most rural borough of the city. It was discovered in 1901, three years after Staten Island joined the city, but its date of deposit was 1866 or shortly thereafter (Hooper 1901, 246). The rural character of double eagle hoarding is also borne out by the large number of double eagle hoards found in farm communities in the Midwest.

The Alexandria, Nebraska hoard is not strictly comparable to the others (except the shipwreck S.S. *Central America*, which had many private pieces), because whereas the others contained United States government double eagles, the Alexandria hoard contained 58 double eagles made by Kellogg & Co., one of the California private gold issuers (Breen 1952, 1005-6).

Although I know of 49 hoards containing double eagles, the only major double eagle hoards to have had their date and mintmark combinations reported in detail are the Baltimore, Maryland (1934) hoard (Breen 1952) and the Green Isle Township, Minnesota (1946) hoard (King 1952). The Baltimore gold hoard closes with the date of 1856, so only two possible dates in the Hull find can be compared with

the Baltimore find. Both these dates, 1851 and 1855, are present in the Baltimore hoard in significant numbers: 79 coins for 1851 and 6 for 1855. The Green Isle Township hoard shares only two date and mintmark combinations in common with Hull, 1851 and 1876, but it closes more than half a century after Hull, in 1927, so it is not surprising that its coverage of the nineteenth century is spotty.

Double eagle hoards are reported in little detail because they are common coins, regarded as bullion and quickly melted. This means there are fewer comparanda than one would like. A review of what hoard evidence is available shows that with the two exceptions of the 1858-O and the Paquet 1861-S, the Hull, Texas hoard is in line with what one would expect of double eagle circulation of the time.

The hoard is also in line with the mint output figures. Again excluding the 1858-O and the Paquet 1861-S, of the 68 possible date and mintmark combinations of the period 1851-1876, the 7 Hull coins rank in the commonest 34. Of each of these date and mintmark combinations, more than 300,000 coins were minted. The 1858-O has a mintage of only 35,250; the 1861-S Paquet reverse, a mintage of 19,250.

We might have expected this hoard to have a predominance of coins from the closest mint—New Orleans. New Orleans had served as the money center for Liberty County. In the early 1840s, James Taylor White, the greatest stock raiser of the time, lived ten miles southwest of the town of Liberty and had \$150,000 on deposit in the state banks of New Orleans (Pickett 1936, 40, 42, 45). But on the evidence of this hoard, by 1876 New Orleans coins did not predominate in the circulation of Liberty County.

A hoard from Vicksburg, Mississippi (Bowers 1997, 285-86) makes an interesting contrast. It contained the following gold coins:

<b>\$5</b>	<b>\$10</b>	<b>\$20</b>
1834	1843-O	1859-O
1835	1847-O	
1844-O (2)	1853	
1846-C	1854-O	
1849-C	1855	
1860-C	1858-O	



Of the fourteen coins in this hoard, seven came from New Orleans (O), which is the nearest mint to Vicksburg, and easily reached via the Mississippi River. Another three coins came from another southern mint, Charlotte (C), North Carolina. Only four coins came from the northern gold mint, Philadelphia, and no coins came from San Francisco. The Vicksburg hoard gives us a picture of the antebellum gold circulation in the South, when the southern mints played an important role and the regional circulation was distinct from other areas. The Hull, Texas hoard gives us a picture of the postbellum gold circulation, when the regional character ceased and the gold coins came from San Francisco and Philadelphia, as was true in the rest of the country. This was partly because the South's regional separateness had been diminished by Civil War and Reconstruction. It was also because of railroad construction. The coins in the Vicksburg hoard traveled by water. The coins in the Hull hoard traveled by rail. Readers of Mark Twain's *Life on the Mississippi* will remember how dominant river traffic was before the Civil War, and how diminished by railroad competition afterwards.

The Hull hoard could have as easily been formed in Minnesota, as in postbellum Texas, and reflects the overall comparative rarity of New Orleans double eagles, rather than the proximity of New Orleans to Hull. This suggests that this was a postbellum emergency hoard, rather than a savings hoard accumulated before, during, and after the Civil War. It is interesting that the two oldest coins in the hoard are also, according to mint statistics, the two commonest coins—an argument that this was a hoard formed out of double eagles in circulation in Texas in or after 1876, rather than a savings hoard of double eagles put aside over a period of several years. The Hull, Texas hoard provides a glimpse of what was in circulation in eastern Texas during Reconstruction—not what was in circulation during the antebellum period or the Civil War.

### 5. The Circumstances of the Deposit

The most recent San Francisco coin in the Hull hoard is nine years older than the closing date. Obviously it took a long time for gold coins to reach Hull and only slowly did gold penetrate into rural

Texas. Farmers are traditionally debtors, and they could not hold onto their gold coins long. They would have gold after they were paid for the cotton harvest, but they soon had to pay back their loans to the banks and the railroads, and the same gold coins could serve year after year. Reconstruction Texas did not import much bullion. Perhaps as a result, Texas was one of the strongholds of the soft money Greenback Party (Martin 1927; Unger 1964, 385).

Why was the hoard deposited? Thordeman linked the deposits of hoards to the fear of violence: wars, riots, revolutions (Thordeman 1948, 192-96). During Reconstruction Texas did not lack for political disruption and Ramsdell's history often refers to general lawlessness (Ramsdell 1910, 33-38, 66-70, 219-23, 301). Ramsdell reports 1,035 homicides in Texas between the end of the Civil War and June 1868 (Ramsdell 1910, 220), although he probably exaggerates the disruption, because he is biased against the freedmen and the Radical Republicans. If Ramsdell is to be believed, much of the postwar disturbance ceased when Reconstruction ended in 1876. Those who lost by the ending of Reconstruction—the freedmen and the Republicans—would have had good reason in 1876 to bury their money and flee for their lives. But racial violence in America has been carefully tallied, and no such racial outbreak in Liberty County is recorded (Newton and Newton 1991; note, however, that reliable statistics on lynchings only begin in 1882). To my mind, the Hull hoard was hidden not because of the ending of Reconstruction, but because of the strength of the Greenback Party.

From 1862 until 1879 the United States did not redeem its notes in gold at par, rather it issued fiat currency. Gold remained available if one were willing to pay the gold premium. In 1879 the paper dollar again became redeemable in gold at par. This was opposed by the Greenback Party. The Greenback Party was not able to stop resumption in 1879, but no one knew how this would turn out in 1878. In that year the Greenback Party made its strongest showing, and it was particularly strong in the Texan state elections of 1878, when the Greenback Party ran second, putting the Republican Party in third place (Martin 1927, 168; Unger 1964, 374-95). The Texan Republican Party was weakened and discredited by the end of Reconstruction, and many Republicans voted tactically for the Greenback Party (Rice 1971, 53-

62), so the second place finish of the Greenback Party was not only because of Greenback strength, but also because of Republican weakness. But the Texan Greenback Party was also strong in its own right, and it did particularly well in Liberty County, sweeping the entire black vote (Rice 1971, 58).

If a person believed at the time that the Greenback Party was going to win, that resumption would be postponed indefinitely, and that massive issues of fiat paper money would follow, they might very well cash in all their paper and exchange it for gold, before the premium on gold jumped higher. This is what I think happened. In effect, the Hull hoard is an emergency hoard, but not in reaction to war or other violence; rather, it is in reaction to the possible financial crisis which might ensue if the Greenback Party won enough votes. In rural Texas in 1878, and particularly in rural Liberty County, this seemed a very probable outcome.

## CATALOGUE

All the coins are United States \$20 gold pieces, with reeded edges, struck with a 6 o'clock die axis. 6 o'clock on the obverse is usually the base of the date. On several coins, however, 6 o'clock is closer to the point of the bust rather than the base of date. The mint could not decide whether the date should be horizontal, and the head of Liberty lean back a little, or if Liberty should sit up straight, and the date slant up a little to the right. Fecht numbers refer to Fecht's personal inventory of his collection (Fecht 1937-45).

1. 1980.109.2293, 1851, Philadelphia, 33.382 grams, Breen 7146, Fecht 1042.
2. 1980.109.2295, 1855, Philadelphia, 33.409 grams, Breen 7174, Fecht 1043. 6 o'clock on the obverse is closer to the point of the bust than to the base of the date.
3. 1980.109.2297, 1857, San Francisco, 33.381 grams, Breen 7187, Fecht 1048.
4. 1980.109.2298, 1858, New Orleans, 33.399 grams, Breen 7191, Fecht 1044. Reverse depicted in *The Numismatist*, March 1937, p. 199.

5. 1980.109.2109, 1861, San Francisco, Paquet reverse, 33.400 grams, Breen 7205, Fecht 1045. Reverse depicted in *The Numismatist*, March 1937, p. 199.
6. 1980.109.2302, 1866, Philadelphia, 33.397 grams, Breen 7224, Fecht 1046. 6 o'clock on the obverse is closer to the point of the bust than to the base of the date.
7. 1980.109.2304, 1866, San Francisco, 33.427 grams, Breen 7226, Fecht 1047.
8. 1980.109.2306, 1867, San Francisco, 33.412 grams, Breen 7228, Fecht 1049.
9. 1980.109.2308, 1876, Philadelphia, 33.415 grams, Breen 7259, Fecht 1050.

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## WESTERN AMERICAN GOLD AND UNPARTED BARS: A REVIEW OF THE EVIDENCE

(PLATES 9)

MICHAEL HODDER

“When I met Conrad [Wiegand], he was ‘Superintendent of the Gold Hill Assay Office’, and he was not only its Superintendent, but its entire force. And he was a street preacher, too, with a mongrel religion of his own invention, whereby he expected to regenerate the universe.

Mark Twain, *Roughing It* (1872)

### Conrad Wiegand, Nevada Assayer

In the late 1860s, Conrad Wiegand ran an assaying business in Gold Hill, Nevada, an incorporated mining town about a mile south of Virginia City. A decade earlier, he had been supervising assayer at the San Francisco Mint, succeeding Agostin Haroszhthy in that position in 1855. After leaving San Francisco, he became superintendent of assaying at the Gould and Curry Mill in Virginia City, Nevada. By 1867, Wiegand was in business in Gold Hill, in partnership with a man named Edwards. Wiegand was on his own in 1871 and after moving back to Virginia City, he continued in the assaying business for the next ten years.<sup>1</sup>

The substance of this article was presented in the author’s Groves Forum Lecture given at the American Numismatic Society on April 10, 1999.

<sup>1</sup> Wiegand’s career can be followed through his advertisements, such as the one he placed in the 1867 edition of the *Pacific Coast Business Directory*, see Bowers &



By all accounts, Wiegand was an unstable, but seemingly harmless, man. While supervising assayer at the San Francisco Mint, in 1856, his sanity had been questioned by members of the Second Vigilance Committee. The San Francisco press reported that Wiegand's rambling attempt to convince his detractors that he really was sane only made everyone more convinced he was not. Years later, when he lived in Virginia City, Wiegand was described by a newspaperman as "a gentle spirit" and "an oyster that fancied itself a whale." Mark Twain, who met Wiegand during his stay in Virginia City, described him in less generous terms.

Conrad Wiegand was not an unknown figure to the men of his day, in San Francisco, Virginia City, or Gold Hill, Nevada. However, Wiegand's name is unfamiliar to most numismatists and collectors, and it does not appear in any of the standard handbooks on western or territorial gold. Wiegand does not appear in Eckfeldt and DuBois' 1852 monograph on western gold coins (Eckfeldt & DuBois, 1852). Edgar H. Adams did not mention him in either his 1909 price list of territorial coins or his 1913 study of private California gold coins (Adams, 1909; 1913). Wayte Raymond did not include Wiegand in the popular 1931 *Private Gold Coins Struck in the United States* (Raymond, 1931).

There are several gold bars known today that have Conrad Wiegand's name stamped on them. They range in stated value from \$78.42 to \$16.80. There are also several unparted bars known. Unparted bars are ones that contain both silver and gold, the two elements being "unparted" from each other.<sup>2</sup> Wiegand's unparted bars include one as small as \$1.62.

Ruddy, 18 Mar. 1982 (Clifford), 232. The author would like to acknowledge the assistance of the following: Stack's, John Ford, Dan Owens, the archivists at the National Archives Pacific Sierra branch, John Chervinsky of the Cambridge Accelerator for Materials Science, P. Scott Rubin, Donald Partrick, Mark Salton, and John Adams.

<sup>2</sup> National Archives. Records of the San Francisco Mint. Record Group 104. *Register of Unparted Bars, January 4, 1858 to April 5, 1858*. From the earliest days following its opening in 1854, the San Francisco Mint had routinely accepted gold dust and nuggets for melting into mixed metal bars containing gold and silver free from impurities. The Director of the Philadelphia Mint was unhappy with this practice but was persuaded by the Superintendent of the San Francisco Mint that his

It has been suggested recently that any bar or ingot with the name of a firm on it that was not listed by Eckfeldt and DuBois in 1852, Edgar Adams in 1909 (and, by extension, in his 1913 monograph), or Wayte Raymond in 1931, has to be a counterfeit made at some time in the early 1950s (Buttrey, 1997). Buttrey argues that all the firms that ever made private gold coins or bars in the western states can be found named in the pages of those three handbooks on western numismatics. He concludes that all the bars known today that have the names of other firms stamped on them, excepting only those gold and unparted bars recovered from the wreck of the *SS Central America*, are later fabrications, part of what is characterized as "the most elaborate fraud in the history of American numismatics."<sup>3</sup>

This sweeping condemnation ignores historical fact. Several gold and unparted bars made by Conrad Wiegand were known to the numismatic public long before 1950. A Wiegand gold bar stamped \$16.80 was included in an undated (1933) offering of territorial gold coins and bars from the W. C. Newcomer Collection distributed privately by B. Max Mehl. According to Mehl's notes, he had purchased this bar from Samuel Hudson Chapman in February, 1927 for \$500. Chapman's letter to Mehl enclosing the Wiegand bar, dated March 10, 1927, included the following:

I called today upon my long time friend Dr. J[acob] R[eesse] Eckfeldt, Chief Assayer [1832-1872], who succeeded his father Adam Eckfeldt who was assayer for a great number of years. He knew all about C. Wiegand. "C. Wiegand was an asst. assayer under my father and on the establishment of the mint in San

western customers wanted the service. The Director, accordingly, allowed the practice to continue but required that the San Francisco Mint record such bars separately from the *Register of Bar Warrants Paid* and that such bars be called "unparted" and not "refined." There are 155 pages in this volume, with pages 156-358 numbered but unused. The fact that 155 pages were used in three months shows just how strong the demand for unparted bars was.

<sup>3</sup> Buttrey 1997, 104. Buttrey's is the only article published on the bars to date that condemns them. Interestingly enough, new western bars are being discovered regularly. See, for example, Holabird 1997, Bertha, 1998, and the drawings of the Van Wyck & Co. (Nevada Territory) and Monumental Mine (Oregon) bars in *The Brasher Bulletin* 10, 2 (Summer 1998), p. 19.

Francisco was appointed assayer there. He later left the service and set up for himself as an assayer. When I visited the Gold Hill Mines in Nevada, many years later, an old cabin was pointed out to me as the office of Wiegand." It was probably then that these slugs were cast and struck by Wiegand. We are thus able to establish and record C. Wiegand as a regular assayer and locate the place of making of these slugs and give them a standing that we could not do before.<sup>4</sup>

Two other Wiegand ingots, unparted bars of a mixture of gold and silver, are known to have been traded in the numismatic market long before 1950. Both appeared in S. H. Chapman's June 21, 1909 sale of the Henry Jewett Collection, lots 986 and 987. These two ingots bore the serial numbers 2077 and 4087, respectively.<sup>5</sup>

The opinions of those who have condemned this body of numismatic material, most of which has never been seen by those convinced of its falsity, appear to be characterized by a lack of familiarity with the basic source materials, as in the Conrad Wiegand example. It is fundamental to the methodology of history that the absence of evidence does not prove or disprove anything. At best, the absence of evidence can be only suggestive of a conclusion. To condemn a class of unfamiliar numismatic material because it is unrecorded in some of the past literature violates this most fundamental rule of historical methodology.<sup>6</sup>

<sup>4</sup> Mehl 1933. This unpublished and undated (internally to ca. 1933) offering of W. C. Newcomer's territorial gold coins was issued by B. Max Mehl and distributed to a handful of clients. One copy bears notations of purchases made by Wayte Raymond. That copy passed to Frederick C. C. Boyd, from whose estate it has been obtained. The March 10, 1927 Samuel Hudson Chapman letter is quoted in Mehl's list.

<sup>5</sup> One wonders what happened to the more than 2,000 other Wiegand bars that had serial numbers from 2,078 to 4,086 that once existed?

<sup>6</sup> Before 1955, very few government bonds issued by the Confederate States were known. A handful had appeared in nineteenth century auction sales. Later a few showed up in sales of the 1960s. Then suddenly, in the late 1980s, a hoard of several hundred thousand bonds was discovered in London, where it had been shipped as scrap paper. Later it was privately sold by Heritage. The more recent discovery (1996) of a huge hoard of 1908 U.S. No Motto gold coins that was previously undocumented is an instance of a mass of numismatic material, unheralded, that suddenly appeared on the market without any record or documentation of the

Conrad Wiegand presents the case of a once well known assayer whose output was prodigious, yet one whose memory and products have been forgotten by most.<sup>7</sup>

#### A Historical Review of the Controversy and Its Literature

Nearly 50 years ago, a series of unfamiliar gold and unparted bars began appearing on the coin market.<sup>8</sup> The first were bars made by assayers located in the western American states and territories and dating from 1854 through the 1880s.<sup>9</sup> The majority of these bars were unparted. All bore various inscriptions. Some of them bore dates. Some of the assayer's names appearing on these bars were known from other sources, such as those of Augustus Humbert, Frederick Kohler, and James King of William. Other names were unfamiliar, such as those of H. M. Naglee, Meyers and Company, and Blake and Company.

About five years later, a second series of bars started showing up on the market. These were different from the first, being what appeared

whole. This material is currently being offered for private sale.

<sup>7</sup> As will become clear later in this essay, T. V. Buttrey initially condemned as false products of the 1950s all western bars that had not been made by Moffat or Kohler. When he was advised that the provenances of some Wiegand bars known today actually pre-dated the 1950s, he revised his remarks about western bars to allow of some genuine Wiegand bars.

<sup>8</sup> As defined by the United States branch mint at San Francisco, a gold bar is one in which the majority, if not all, of the major trace elements has been refined and eliminated, making the gold content of the bar 900 fine or higher. An unparted bar is one in which the major base elements by weight have been refined out but the silver content has not. Unparted bars typically are below 900 fine gold. Many unparted bars are mostly silver, with gold finenesses as low as 100.

<sup>9</sup> An auction appearance of such a bar in the early 1950s can be found in the catalogue of the 1952 ANA convention sale conducted jointly by New Netherlands Coin Company, Hans M. F. Schulman, and Henry Grunthal. This was lot 4533, a \$3.04 unparted bar with the stamp of the assaying firm of Blake and Company located in Owyhee, Idaho Territory. The description notes that the bar had been consigned by Wayte Raymond. The bar sold for \$155 to Don Keefer bidding under the code name "Lotus." At the time of its first appearance on the market, the American Numismatic Society thought it significant enough to photograph (ANS negative no. 7952).

to be gold bars either dateless or bearing dates such as 1741, 1744, or 1746 along with stamps resembling the obverse and reverse types of the Mexican Pillar Dollar. These bars also bore what appeared to be the Mexico City mintmark. At the time of their appearance on the market, these bars had acquired what may politely be called a legend, that attempted to explain how they were discovered.<sup>10</sup>

The marketplace's first reaction to these newly available collectibles was one of cautious enthusiasm. These bars, of both kinds, were entirely new to the majority of collectors. There was no widely known literature on the subject of bars like these, and few could remember having seen such objects before.<sup>11</sup> However, they seemed to be historical artifacts of some numismatic significance, and in the decade following their first appearance on the market these bars, particularly the western assay bars, slowly gained an acceptance among collectors. By the early 1970s, such bars were in the J. Lilly Collection, the Bank

<sup>10</sup> The legend can be read in Buttrey 1974, 28-29. It takes the form of an undated private communication from John J. Ford, Jr. to Buttrey, in which a fanciful tale of a secret treasure map found in an old archive, a 1748 Spanish shipwreck, and a few other elements are woven together into a tapestry of wonders. The letter refers to events dated 1951 and 1955-56 and gives the latter range as the earliest acquisition dates for these Mexican bars. Coming as it did before such sunken treasure discoveries as the *Nuestra Señora de Atocha* and the *SS Central America*, the legend may have had some crude attraction in the 1960s. To a modern reader, it can be read as a marketing tactic designed to give the bars the flavor of recovered treasure. Unfortunately for the bars' subsequent numismatic history, the legend became the starting point for the only focused study yet published on them.

<sup>11</sup> The first such bar to appear at public auction in the 1950s was the Blake & Co. bar in the 1952 ANA convention sale catalogue. It was consigned by Wayne Raymond, author of the 1931 handbook that did not include Wiegand or Blakel. The cataloguer wrote in his description "We cannot locate any information relative to Blake & Company..." and the bar is "...the first we have seen and to our knowledge, the only specimen ever offered." It may have been the first the cataloguer had seen but it was certainly not the first ever described or offered for sale. Another, serial no. 1,681, dated 1869 and stamped with the value of \$6.85, was shown by Julius Guttag at the February 12, 1937 meeting of the New York Numismatic Club (see *The Numismatist*, April 1937). A third, dated March 12, 1867 valued at \$6.78 had earlier been offered for sale by Herbert O. Lindle in the December 1936 issue of *The Numismatist* (p. 1064). The Lindle bar was described as having an Internal Revenue Service stamp on one edge, just as the 1952 ANA sale piece also had.

of California's collection, and the Henry H. Clifford collection, to name just three. Western assay bars came to be listed in *A Guide Book of United States Coins* beginning in 1953-54, and by 1960 bars stamped with the names of Kellogg and Hewston, Blake and Agnell, Parsons & Company, Meyers & Company, and James King of William could be found in the pages of this standard collector's guide. Don Taxay, author of *The Comprehensive Catalogue and Encyclopedia of United States Coins*, included western assay bars in his listings of territorial coins. Walter Breen also included western assay bars in the notes he maintained on territorial coins.<sup>12</sup>

At roughly the same time that the Mexican bars first showed up in the market, in the late 1950s, a group of proof-like 1853 United States Assay Office of Gold \$20 pieces also made their appearance. Starting in 1958, several specimens of these coins were sold into some prominent collections, including those of Dr. James O. Sloss and Paul Garland. These coins, along with associated numismatic materials, came to be known as the "Franklin Hoard" after Paul Franklin, who was said to have discovered them in various western locales.<sup>13</sup>

<sup>12</sup> The listings in the *Guide Book* were maintained until the nineteenth edition, 1966. Taxay's catalogue was first published in 1970 by the New York coin dealers Harmer Rooke. Breen's notes, edited and amplified, later became part of the territorial listings published in Breen 1988.

<sup>13</sup> The existence of the Franklin Hoard has been challenged, the claim being made that the "hoard" was just part of the elaborate fraud designed to lend some air of authenticity and mystery to the fake coins (Buttrey 1997, 97-98). That Paul Franklin actively searched the southwest for numismatic items in the early 1950s, particularly for western assay bars, is unassailable. For example, on October 23, 1953, Charles F. Willis, State Secretary of the Arizona Small Mine Operators Association, wrote to Paul Franklin thanking him for a silver ingot Franklin had sent as a gift. Mr. Willis wrote in his letter that "I had heard about these [i.e., ingots] but had never seen one although some of the old-timers say they were relatively common many years ago." Willis also acknowledged Franklin's renewal of his membership in the ASMOA. This letter may be read as Exhibit 1 of John Ford's unpublished August, 1967 analysis of the Franklin Hoard for the PNG arbitration board. Another example may be seen on p. 12 of the July 15, 1955 issue of the *Tonopah Times-Bonanza*, which reported that Paul Franklin was in Tonopah at the suggestion of Charles Diehl, looking for old assayer's bars. Diehl was noted as having been an assayer in Goldfield from 1907 to 1910 and is said to have told Franklin that there

In 1963, collector Paul Garland became convinced that the 1853 USAOG \$20 he had bought five years earlier was counterfeit. The following year, at the 1964 American Numismatic Association convention, Dr. James Sloss independently enlisted a group of individuals to consider the question of whether his own coin was genuine. Learning of Sloss' concern, Garland offered his coin to the group for their study, as well.<sup>14</sup> On the basis of some x-ray diffraction test results which suggested that Garland's and Sloss's coins were casts, Garland published a statement that his coin was counterfeit (Garland 1964).

After failing to obtain a refund from the dealer who had sold him the coin, Paul Garland appealed for help to the Professional Numismatists Guild. In response to his request, the PNG appointed an arbitration committee which met at the 1966 ANA convention held that year in Chicago.<sup>15</sup> After hearing arguments from Eric Newman against the authenticity of the proof-like 1853 USAOG \$20 pieces, and from John Ford for their genuineness, the PNG committee eventually ruled that Garland was entitled to a refund of his purchase price. The committee did not make a determination on the question of the authenticity of the coins.<sup>16</sup> After the decision was announced, both Walter Breen and Don Taxay wrote spirited defenses of the authenticity of the USAOG coins in question.<sup>17</sup>

might be ingots in Tonopah that might be for sale. The paper noted that Franklin's search was unsuccessful.

<sup>14</sup> The group, later known as the USAOG Study Group, included George Fuld, John Pittman, Abe Kosoff, and Eric Newman.

<sup>15</sup> PNG committee members included Ronnie Carr, Herb Bergen, and Lester Merkin.

<sup>16</sup> The PNG arbitration panel had been convened to decide if Garland was entitled to a refund from Tom Ryan of Chicago, who had sold him the coin. If the coin was a fake, Garland was automatically entitled to a full refund, while if it was authentic, no refund would be due. The PNG panel chose not to decide the issue. Contrary to popular belief, the PNG panel did not condemn the Franklin Hoad coins as fake. The panel's full report has never been published, nor have Ford's or Newman's arguments. Copies of all three occasionally appear for sale at public auction.

<sup>17</sup> Neither of which has ever been published. Copies are as rare as Newman's paper attacking the coins and appear at auction about as frequently. Breen's report was entitled "Evidence to be Read at the Trial of the Knave of Hearts" and its

In 1966, two years before the PNG panel finally came to their indecisive conclusion about the 1853 USAOG \$20 pieces, the *Guide Book* segregated the western assay bars it had included since 1953 in a special section titled "Exceptional Pieces" which were said to be subject to "scientific research and study".<sup>18</sup> Five years later, the *Guide Book* dropped its special listing of western assay bars altogether and entirely without comment.<sup>19</sup> The recent find of bars in the wreck of the S. S. *Central America* has brought a handful of the sea salvage pieces back into the pages of the *Guide Book*, but those removed in 1971 have since continuously been omitted.

contents refuted Newman's arguments on a point by point basis. Taxay's report concluded "The case for their genuineness is overwhelming and irrefutable." A single 1853 USAOG specimen was condemned as counterfeit by J. P. Martin of the ANA's Authentication Bureau in February 1994. As a member of the ANA's authentication committee, I wrote to the ANA on February 19, saying "There are strong arguments for and against their [1853 U.S.A.O.G. \$20 pieces] authenticity....ANAAB made the mistake of relying primarily on its own resources and in this matter its inexperience has rendered its opinion both facile and naive....I believe that the final word on these pieces will not be written until someone replicates all the research studies done to date and either validates or condemns them...In my opinion, ANAAB rushed to judgment on this issue.I still do not feel confident enough in what I know to condemn or authenticate them." This opinion moved the ANA away from its firm stance against the authenticity of the coin. Robert Leuver, then Executive Director of the ANA and authenticator J. P. Martin's superior, wrote in *The Numismatist* (May 1994) that "Perhaps the story behind this enigmatic coin will never be known, and the ANA's findings will merely contribute to its lore."

<sup>18</sup> This statement appears to have been premature. There is no evidence that such a scientific study was begun. It is certain that no results from such a study have ever been published.

<sup>19</sup> "As far as I am aware, no scientific research or study was ever produced to justify any of the exceptional pieces." (Buttrey 1997, 107-8). Not until 1997, some 30 years after the *Guide Book* unilaterally dropped them, was any paper condemning the western bars published. The *Guide Book's* editors have acted in the same fashion in at least one other instance. In 1962, the *Guide Book* dropped its listing of the Lima style doubloon made by Ephraim Brasher in 1786 following a statement that "New evidence indicates that it may be a fabrication of a much later date." The "new evidence" referred to was never produced and the delisting of the type appears to have been unwarranted. Twenty nine years later the Lima style doubloon was shown to be authentic (Hodder 1991).



Three years after the *Guide Book's* summary action, in 1974 Theodore Buttrey published the only study to date of the Mexican bars (Buttrey 1974). Buttrey studied a selection of the bars, relying on photographs for evidence of others, and concluded that all of them were fabrications. He based his opinion on what he felt were errors in typology and morphology that could only be explained as mistakes made by a counterfeiter. Taking as his starting point the market oriented legend about the discovery of the bars, Buttrey's conclusion that "this story is not possible as it stands" should not have been surprising.<sup>20</sup>

In 1981, Buttrey published a short paper discussing the so-called Tubac ingot, in which he concluded that it, too, was a fabrication.<sup>21</sup> Working only from an illustration published in the 1964 *Encyclopedia Britannica*, and the caption to the illustration written by the volume's editors, Buttrey concluded on historical grounds that the ingot could

<sup>20</sup> Buttrey 1997, 29. At the January 14, 1984 meeting of the council of the ANS (see Council Minutes, pp. 5-6), a resolution was made and passed that recognized the Buttrey condemnation of the Mexican bars and continued "The Society therefore expects its members to take cognizance of the foregoing information [i.e., its acceptance of Buttrey's conclusions] and to make the same available in any publication relating to these objects." As far as I am aware, this was an unprecedented action against a body of what it believed to be counterfeits, one that the ANS had not taken against any other material it considered to be fakes or fantasies. True to its resolution, one member of the ANS council has doggedly followed every public sale of a Mexican bar since 1984, contacting the sellers to alert them that the bars had been condemned and at times asking for the names of the consignors and buyers of such items.

<sup>21</sup> Buttrey 1981. The Tubac ingot is a round gold disc that purports to be the product of a Jesuit mine located in Tubac, Arizona. Buttrey showed from positive evidence that the hamlet of Tubac, Arizona did not appear as a settled locale on a map drawn up circa 1702 by the Jesuit missionary Father Eusebio Kino (1644-1711). Tubac was inhabited ca. 1740, but there is no evidence of its inhabitants prior to that date. Nor was there a mine there, nor mining activity in the area. Buttrey successfully showed that the Tubac ingot was a concoction made to capitalize on the myths popular in the southwest of lost Jesuit gold mines. He stated that the typology of the Tubac ingot, with the obverse of a Jerusalem cross bearing in its quarters a castle, the letter V, the letter K, and a castle, has no parallel with authentic coinage types but has a distinct similarity to the type of the Mexican bars of the 1740s he earlier condemned as false.

not have been made in 1707 as the caption stated it had been.<sup>22</sup> Buttrey included in his study of the Tubac ingot a mention of the Mexican bars he had condemned earlier. He wrote "In fact the typological analogies between the [Tubac] ingot and the [Mexican] bars imply that both bodies of material derive from the same modern source. The context in which the ingot made its only public appearance further suggests that such is the case....The Tubac ingot was unknown before its illustration in the *Encyclopedia Britannica* in 1964, where all the pieces on pl. vi appeared "by courtesy of Ford Numismatic Publications."<sup>23</sup> It seems to have been important to Buttrey's argument against the Tubac ingot, over and above the solid historical grounds he had already uncovered, that it appeared on the photographic plate in company with other pieces which were attributed to "Ford Numismatic Publications." Buttrey left his reader with the impression that attribution to ownership by John Ford was sufficient to raise questions about the authenticity of any numismatic object.

In 1988, Walter Breen published the results of his lifetime's study of American numismatics (Breen 1988). Like Adams before him, Breen was interested exclusively in coins or coinage expedients (i.e., bars that passed as currency), and he had little to say about most other western bars. A careful reading of his text reveals, however, some

<sup>22</sup> Shortly before the formation of the USAOG Study Group, Walter Breen had been commissioned by the publishers of the *Encyclopedia Britannica* to write an article about United States coins for the 1964 edition. The accompanying plate had one of the Mexican bars, two of the newly discovered USAOG items from the Franklin Hoard (one being square), and the so-called Tubac ingot. All the illustrations on the plate were credited to "Ford Numismatic Publications," a business name adopted by John J. Ford, Jr.

<sup>23</sup> Buttrey 1981, 141. Even though Buttrey had not seen the Tubac ingot, and far less than half of the known Mexican bars, he still concluded that all of them were fakes. Such strong reliance on photographic evidence is troubling, particularly in matters of authentication. His historical arguments against the Tubac ingot are solid, if the ingot is really dated 1707 as the published caption states it to be. It has been claimed, however, that the caption as printed in the *Encyclopedia Britannica* was a typographical error for 1767. Whether a different reading of the date would materially alter the fact that the Tubac ingot is extremely problematical is uncertain, and, for the present, Buttrey's condemnation of it remains the starting place for any future study of the piece.

salient comments about western American numismatics that have been imperfectly quoted elsewhere.

Writing of the 1853 USAOG \$20 pieces that had been the subject of controversy two decades earlier, Breen restated his earlier opinion and wrote "In addition to the normal Humbert issues, a large number of irregular and apparently experimental pieces surfaced during the 1950s, many as a result of advertising campaigns mounted by John J. Ford, Jr., circularizing banks, antiques dealers, bullion dealers, newspapers, and other establishments in cities and small towns throughout the mining districts in California, Nevada, Oregon, Idaho, Colorado, Wyoming, Utah, Arizona, and New Mexico. These were attacked in 1966 on insufficient evidence; the controversy has long since died down unresolved."<sup>24</sup>

In discussing the bars made by Frederick Kohler, Breen stated that the handful of bars that survives, today, represents only a portion of those Kohler must have made in 1850. Referring to any future discoveries of new Kohler bars, he wrote "Other denominations certainly existed and may still survive. Authentication is mandatory."<sup>25</sup>

<sup>24</sup> Breen 1988, 612. Breen kept an open mind about the authenticity of the 1853 USAOG \$20 pieces. His conclusion about them in 1988 was unchanged from what he felt about them in 1966, that their condemnation was both hasty and insufficiently grounded in the numismatic evidence.

<sup>25</sup> Breen 1988, 637. In Buttrey 1997, 108, Buttrey stated Breen was unpersuaded of the authenticity of the unique \$47.71 Kohler ingot because Breen wrote regarding it "Authentication is mandatory." What Breen actually wrote on p. 637 was the text quoted in body of this paper. It should be obvious that Breen was referring to any new, unpublished Kohler bars that might be discovered in the future and not to the ones he already knew about. Breen had nothing to say about authentication being essential for the \$41.68 Kohler bar, for example, which he traced to New Netherlands Coin Company. In fact, he made the same comments about 1909-S V.D.B. cents and 1907 high relief double eagles. In discussing Breen's *Encyclopedia* as a source of information about western assayers, bars, and the numismatic history of the California gold rush, Buttrey wrote "Unfortunately, the text...is entirely without footnotes and is unkeyed to the substantial bibliography. Consequently, it is impossible for the reader to judge its accuracy or originality, and it cannot be used as a reliable secondary source" (Buttrey 1997, 89-90, n. 1). Yet Buttrey bolstered his arguments against the authenticity of most of the western bars known today, by referring to Breen as an authority against them, particularly in notes 18, 26, 33, 36, as well as in several places throughout the text.

Breen accepted the two known Diana Gambling House \$20s as genuine, as well as the two surviving J.H. Bowie \$5 gold coins. He also listed the James King of William \$20 and the H. M. Naglee \$100 bars without comment. He called the Blake & Agnell ingots controversial but also offered evidence that would explain objections raised against them. He listed the Parsons & Company \$20 piece, called it controversial, and drew attention to the many copies of the piece by writing "Warning: Numerous base metal forgeries exist....Authentication is mandatory." (Breen 1988, 638, 639-40, 651, 662). In no case did Breen condemn as fake a bar he listed in his encyclopedia. When Breen believed something was fake, he said so.

In 1990, E. G. V. Newman published the results of metallic analyses conducted by the Assay Office of Goldsmith's Hall on some scrapings taken from one of the Mexican bars (Newman 1990). Based upon the readings, which will be described in detail later in this paper, and an imperfect understanding of how colonial Spain refined gold, Newman concluded that the bar he examined could not have been made in the eighteenth century, and was, in fact, a fake of the twentieth.

Newman's conclusions were shown to be inaccurate in my 1990 article in which I examined analyses of genuine colonial Spanish gold coins that revealed the coins to be of extremely high purity. Colonial Spain could routinely achieve 95% purity in its coins (and better), and therefore Newman's reasons for condemning the Mexican bar were groundless.

In March 1996, Buttrey delivered that year's Huntington Medal Lecture before the American Numismatic Society. Taking as his subject western assay bars, Buttrey expanded his scope to include not only the western gold bars but also the Mexican bars. Buttrey stated that all of the Mexican bars could be traced back to just two sources, and that they were the same two suppliers who also distributed the western bars. Without naming who these sources were, he roundly condemned all the western bars as false, excepting only a handful of well known bars made by Moffat and Kohler. He referred to the SS *Central America* find as including "wonderful discoveries" and without mentioning any of the finds specifically, although several had already been published, concluded his lecture by saying "I have no doubt that

when this material is made available for study in the future, there will be much we can learn from real western American gold bars.”<sup>26</sup>

Buttrey's revised lecture was accepted for publication by the American Numismatic Society in its *American Journal of Numismatics* (Second Series). In 1997, a page proof of the completed article was sent to Stack's, the New York coin dealers, for their comment. Buttrey's article was seen to name the two persons he had earlier called the two sources of the false Mexican and western bars. One of the two, John Ford, was named as the primary source. Stack's was named as the secondary source.<sup>27</sup> Buttrey qualified his oral statement that all the bars except the well known Moffat and Kohler bars were fakes by adding one further exception, a Hentsch and Berton bar published by Stack's in 1943. Apart from that sole exception (and the bars found aboard the wreck of the SS *Central America*), Buttrey wrote that all the others were products of the numismatic fraud of the 1950s. Buttrey asked the question, did any of the western bars ever appear at auction or were they otherwise known before 1950? He replied by writing “The answer is that before the 1950s you cannot find them at all” and concluded by saying that “none has a published provenience that goes back before the 1950s.”<sup>28</sup>

Stack's review of the Buttrey article revealed that the available source material, both published and unpublished, that dealt with the

<sup>26</sup> Quoted from a transcription of tape recordings of the lecture made independently by two attendees. Although Buttrey used the word “gold” to describe the bars, here and elsewhere, the vast majority of western bars are unparted as defined by the San Francisco Mint.

<sup>27</sup> Buttrey 1997, page proofs, pp. 93, 97, and 104. Page proofs entitled “False Western American Gold Bars,” were sent to Stack's for comment by the American Numismatic Society on October 23, 1997, paginated 89-112, inclusive. They include the Addendum which appears in the printed paper but which was not part of the Huntington Lecture as delivered. The printed Buttrey paper is also paginated 89-112, inclusive, and is substantially unchanged from the proof. The implications of naming Stack's may have been what suggested to the ANS that a copy of the Buttrey article should be shown to Stack's before it was printed. The ANS did not send Stack's a copy until printing was just a few weeks away. On receipt and after a first reading, Stack's did its best to alert the ANS that the Buttrey article was flawed and should not be published as written. The ANS ignored the advice.

<sup>28</sup> Page proofs, 99-100.

subject of western assay bars had not been covered. In an attempt to advise the ANS that Buttrey's research failed to include the full body of available source material, and as evidence of this fact, Stack's provided a selection from the references it had to assay bars that were known to the collecting public before 1950 that Buttrey had not included in his text. Stack's advised the ANS that it had other evidence of a similar nature that concerned the western bars. Stack's also furnished the ANS with a copy of an unpublished study of the Mexican bars written by Walter Breen, in which Breen concluded that Buttrey's 1974 condemnation of those bars was in error.<sup>29</sup>

References furnished to the ANS by Stack's were incorporated into the printed version of Buttrey's paper. His previous statement that only one of the western bars had a published provenance earlier than 1950 was changed to read "hardly any has a published provenience that goes back before the 1950s."<sup>30</sup> Buttrey dismissed Breen's study of the Mexican bars, and his conclusion that they had been unfairly condemned, by characterizing it as "unfinished" and "unpublished," and on one salient point, "speculative."<sup>31</sup>

There were also some significant changes made in the printed version when Buttrey came to name those responsible for what he characterized as the greatest fraud in American numismatic history. In his lecture, Buttrey stated there were two sources for all the fake bars, Mexican and western, but he did not name them. In the proof version, he wrote that the "Mexican bars began to come on the market in the late 1950s, principally from two suppliers, of whom one was the primary source" and that the western bars "go back to just

<sup>29</sup> Breen 1979. This unpublished 22 page manuscript was written for Stanley Apfelbaum of First Coin Investors, for whom Breen worked at the time. Breen wrote in his preliminary draft of this study "However, following on another controversy involving the man who distributed many of these ingots [i.e., John Ford and the 1966 PNG arbitration], they were condemned by Theodore V. Buttrey as forgeries, without his having given them any detailed study, and on grounds which now appear to have been grossly insufficient." Breen told me in response to my question that he never changed his opinion of the 1974 Buttrey condemnation.

<sup>30</sup> Buttrey 1997, 99. In n. 19, Buttrey lists the three exceptions that he then knew of, saying "I owe several of these references to Stack's."

<sup>31</sup> Buttrey 1997, 96, n. 10. Buttrey's handling of Breen's evidence was dismissive.

two sources," each pair of sources being the same in both cases.<sup>32</sup> In the printed paper, Buttrey dropped all references to two suppliers and altered his text in the first instance to read that the "Mexican bars began to come on the market in the late 1950s," dropping the reference to two suppliers. In the second instance, referring to the western bars, Buttrey eliminated one of the two sources he had named earlier, writing that these bars "go back to just one source and various participants in distribution."<sup>33</sup>

### The Western Bars: Pro and Con

Buttrey's 1996 article made several points against the authenticity of all known western assay bars, excepting only the three gold and two unparted bars he had been told about and the largely unpublished material found in the wreck of the SS *Central America*. These arguments may be summarized as follows.

1. With just a few exceptions, the firms that issued coins in the west were all included in Eckfeldt and DuBois' 1852 list. Those that were not listed were only Wass, Molitor, Kellogg, Clark Gruber, Conway, and Parsons. By 1909, when Adams wrote, the list of the coiners of the west was finished. When Raymond wrote in 1931, there were no additions to Adams. There have been no additions since.<sup>34</sup>

2. Collecting private and territorial gold coins has been a popular part of coin collecting in general since the 1870s. Yet, until the 1950s,

<sup>32</sup> Buttrey 1997, 93 and 104. The sources are named on 93, n. 7, and 104, n.25.

<sup>33</sup> Buttrey 1997, 93 and 104. The text of nn.7 and 25 are almost unchanged from the proof to the printed paper, save for some softening of the language in the former which has the effect of avoiding a direct accusation of fraud on the part of one of Buttrey's "two sources."

<sup>34</sup> Buttrey 1997, 91-92, n. 5 "...the corpus of issuing firms was fixed by the mid-1880s (and no doubt really rather earlier)." When Edgar Adams published his listing in 1909, no other firms had been added. When Wayte Raymond published his own list in 1931, still nothing new had been added. Thus, the firms Eckfeldt and Du Bois listed as issuing coins in 1852, supplemented by a few others such as Wass, Molitor's of 1853 and the Colorado coins of the 1860s, were all that ever struck coins privately in the west. "The catalogue of private gold coinages remains essentially unchanged to this day."

nobody collected western bars because they did not appear in auction sales until that date. B. Max Mehl, whom Buttrey characterized as producing “absolutely first rate material,” did not auction a single western bar from 1906 to 1955.<sup>35</sup>

3. The so-called Mexican bars have already been proven to be false. They, too, first appeared on the market in the 1950s and they, too, derive from the same source(s) as the western bars (Buttrey 1997, 93-4). Like the Mexican bars, there is no documentation about the western bars. Buttrey concluded his arguments by asking “How is it that the bars which had been unknown for a hundred years were suddenly not just available, but relatively common and so diverse? There is no documentary evidence of a huge find anywhere” (Buttrey 1997, 103).

4. The western bars share important characteristics with the Mexican bars, which are false (Buttrey 1997 99-105). Both were made from punches and the punches vary in their placement on the bars. One would expect a standard form for such bars.

5. The western assay bars in question are not included in the *Guide Book*.<sup>36</sup>

6. The bars found in the wreck of the SS *Central America* included two of the firms represented on the western bars (Justh & Hunter and Blake & Co.). Yet, the ship’s bars are different from the western bars, because they are carefully cast with sharp edges and they are carefully punched with a small type font different from the logotypes seen on the western bars (Buttrey 1997, 106, n. 30.). In addition, the ship’s

<sup>35</sup> (Buttrey 1997, 100-101). While Mehl’s sales may have included “first rate” materials, his catalogues were not models of numismatic writing and scholarship. Adams notes that Mehl lacked “...specialized knowledge of the various branches of the hobby” and that he was not a “disciplined numismatist.” In summary Adams says “Let his catalogues be a tangible reminder that no man can do everything but, once in a great while, an individual comes along who is determined to try.” John W. Adams. *United States Numismatic Literature* 2 (Crestline, CA: George Kolbe Publications, 1990), pp. 57 and 58.

<sup>36</sup> Buttrey 1997, 105. “The author and editor of the standard *Guide Book of United States Coins*, too, have been right, in that for the last quarter-century they have declined to include the western bars in their listings. Those of us interested in serious historical scholarship owe them a debt of gratitude.”



bars are “vastly bigger than the recent western bars.” The large bars “were a bullion source for coin and were regularly sent on to be minted” (Buttrey 1997, 107, n.30).

With but one exception, Buttrey’s arguments are inadequate.

*Reason 1.* If it’s not in Eckfeldt and DuBois or Adams, it cannot be real. We have already seen one example that was not included in Eckfeldt and DuBois, Adams, or Raymond: Conrad Wiegand’s assaying business, one that nevertheless issued assay bars. We have seen that some of Wiegand’s bars still exist, that some of them were known long before 1950, and that there is even evidence that U.S. Mint Assayer Adam Eckfeldt knew Conrad Wiegand as a fellow assayer. The fact that Wiegand started his business long after Eckfeldt and DuBois wrote their book is an obvious reason why he was not included in it.

There is another, simpler, indeed almost self-explanatory, reason why Eckfeldt and DuBois did not include any makers of assay bars in their 1852 handbook beside Moffat and Company and F. D. Kohler. The reason has to do with the status of these two firms. Both Moffat’s and Kohler’s firms were legally established institutions of the state and not simply individual firms running a private assaying business like Wiegand, Molitor, Naglee, Gould & Curry, and a host of other now obscure assaying companies.

Moffat and Company was the only firm to arrive in California from the east bearing a recommendation from the then sitting secretary of the treasury. Moffat’s bars were a coinage substitute, made between June and August 1849, and their maker’s close connections with New York and Washington financial circles recommended their bars to both the California populace and Eckfeldt and DuBois.<sup>37</sup> By September 30,

<sup>37</sup> In their advertisement of September 6, 1849 (Adams 1913, 13-14), Moffat and Company printed a testimonial from the New York banking firm of Beebee, Ludlow & Co. (Matthew Adams Stickney had earlier bought the unique gold 1785 Immune Columbia from Beebee & Parshall Company, which he traded to the Mint for an 1804 silver dollar) which stated that the New York bankers consider Moffat’s stamped assay bars “equal to the United States or London Mints” own coins. Moffat & Co. had the written endorsement of R. J. Walker, then Secretary of the Treasury, who actually allowed his name to be affixed to the firm’s June 21, 1849 advertisement in the *Alta California*.

1850, Moffat and Company was an officially appointed United States Assay Office of Gold and had a contract with the Secretary of the Treasury to issue ingots and bars that would bear the stamp of the United States as affixed by Augustus Humbert, United States Assayer of Gold<sup>38</sup>. Some numismatists believe that Moffat's firm was an official U.S. mint in all but name right from the beginning in 1849.

The state of California established its own official assay office on April 20, 1850. Frederick D. Kohler, of the firm of Broderick & Kohler of San Francisco (the makers of the Pacific Company \$5 and \$10 gold coins) opened the state's assay office in San Francisco on May 24, 1850 (Adams 1913, 9). Kohler was charged with issuing ingots in lieu of coins to any and all who wanted their gold rendered in such a form. Kohler's ingots were, therefore, official California state currency. On July 1, 1850, Kohler opened the Sacramento assay office, but it closed effective January 28, 1851 in anticipation of the February 1 opening of Moffat and Company's United States Assay Office of Gold. Two years later, Kohler was working at Wass, Molitor in San Francisco doing business as the United States Assay Office.<sup>39</sup>

Edgar H. Adams had the same leaning towards official assaying firms that Eckfeldt and DuBois had, and he only included Moffat's and Kohler's bars in his lists for the same reasons Eckfeldt and DuBois had. Adams began his 1913 study of California pioneer gold with the State Assay Office, because, although it was not the first to issue "coins," the establishment of a state office intended to strike coins was mentioned early in 1848. Adams' natural deference to an institution of the state is most clearly seen in his giving Kohler's operation precedence over all others, even the earlier ones. As for Moffat and Company, which incidentally was the subject of the second of Adams' serial studies on California pioneer gold, Adams wrote "While Moffat was not the first firm of private coiners to issue pieces of gold...the assay office conducted by them was nearly always of a semi-official character" and he went on to say that Moffat's assay office eventually became the San Francisco branch mint (Adams 1913, 14). Adams

<sup>38</sup> Moffat and Company proudly advertised this official status. See the *Alta California*, January 22, 1851.

<sup>39</sup> *Daily Alta California*, July 28, 1853, Adams 1913, 12.

clearly gave pride of place to those two institutions that were of official state and semi-official national character and status.

Again like Eckfeldt and DuBois, Adams only included those bars that were not only made by officially sanctioned firms, but that were also issued as coinage substitutes. He states "Moffat & Co....during the summer of 1849, issued rectangular ingots of gold, which passed current in place of circular coins," "while Frederick D. Kohler, the newly appointed State Assayer, began the issue of rectangular ingots of specified but greatly varying value, which served the purpose of a circulating medium" (Adams 1913, ix-x). In his 1909 price list of territorial gold coins, Adams defined his subject matter as "Private gold coins are those which have been struck in various sections of the United States, from 1830 to 1861, to supply a suitable currency of definite values at times when there existed a lack of regular United States coins" (Adams 1909, 33).

For a western assay bar to be included in Eckfeldt and DuBois as well as in Adams it had to be made by Moffat or Kohler. No others need apply, it might be said, unless they could prove they were both officially issued and were substitutes for coins. Does this mean that Adams' books prove no other bars could have been made in the west in the 1850s and later? Was the entire list of western firms making gold "closed" by the time Adams wrote his 1909 price list, as Buttrey has stated? Adams, himself, would have been the last to make such claims.

Adams was very aware of the changeable nature of numismatics and the impact new discoveries can have on the field.<sup>40</sup> In the introduction to his masterwork, Adams wrote "the complete history of the gold coinage of California must be written later, since there are at present too many gaps to permit the preparation of an adequate work on the subject" (Adams 1913, 4). Seven years after he published his catalogue

<sup>40</sup> Buttrey writes of Eckfeldt and DuBois and Adams, "The catalogue of private gold coinages remains essentially unchanged to this day" Buttrey 1997, 52. Note that Adams writes (Adams 1913, 52) concerning the \$16 Moffat bars, that a newspaper of 1849 mentioned bars of \$20 and \$50 value, to which Adams replies "That no examples of these values are now known does not necessarily prove that none was ever issued...."

of California coiners, in a letter dated September 28, 1920, Adams wrote to John Work Garrett saying "I have gathered a good deal of data concerning the Oregon, Mormon, Colorado, Georgia, and North Carolina private issues which have not been published" (Bowers 1979, 467).

Adams was correct in saying that he had not written the final word on territorial coinages. The list of issues and varieties that were unknown to Adams and not published by Raymond in 1931 includes the following. If territorial pattern coins that were also unknown to Adams were to be included here, this list would be much longer.

**Frederick D. Kohler:** the bar valued \$37.71, first offered to John Work Garrett by Wayte Raymond on August 23, 1936 for \$3,000. Garrett asked for further information, so on February 12, 1937 Raymond wrote to Garrett again, saying "The Kohler bar was bought from an old family in New Haven by the name of Castle. I purchased it through a stamp dealer in that city."<sup>41</sup> Later, this bar was exhibited by F. C. C. Boyd at the May 12, 1939 meeting of the New York Numismatic Club.<sup>42</sup> Another Kohler bar, valued at \$41.68, was purchased by dealer Ben Stack from an old riverboat captain's family in August 1964 (personal recollection).

**Moffat and Company:** the second variety of the \$16 bar, which used a Roman I instead of an Arabic 1 in the denomination. Also, the unique bar valued at \$14.25, actually discovered by B. Max Mehl. On October 17, 1932, Mehl wrote to John Work Garrett saying "Also pleased to herewith enclose a photograph of a new discovery I made just recently: a heretofore unknown specimen of a Moffat bar!" (Bowers 1979, 497). Mehl goes on to write "I discovered this bar in a small town in California and have just succeeded in purchasing it" (Bowers 1979, 497).

<sup>41</sup> Bowers 1979, 507.

<sup>42</sup> H. O. Granberg showed a Kohler bar valued \$16 (did he mean Moffat?) at the September 7, 1915 meeting of the Pacific Coast Numismatic Society (*The Numismatist*, Oct. 1915). If it really was a Kohler bar, it has since disappeared. In Adams 1913, 15, n. 1, Adams refers to a paper read before the English Numismatic Society on November 22, 1849, in which one William D. Haggard notes that "There are other bars, from fourteen to sixty dollars, which pass as money and are chiefly used in gambling." Haggard did not name the bars' maker(s).

**United States Assay Office of Gold:** 1851 \$50, the variety with a central star and rays on reverse, which first appeared in Glendining 20 June 1937 and was later sold in Kosoff, 27 April 1956 (T. James Clarke), 701.

**Pacific Company:** the \$10 piece is known with plain or reeded edge. Adams knew the reeded edge variety. He may not have known the plain edge one.

**J. S. Ormsby:** the reeded edge \$5 piece was first described in Superior's Auction'89, 7 July 1989, 997. The plain edge \$5 was not in Adams' monograph at first, but was added at the end under "Additional Notes."

**Wass, Molitor:** Adams only knew one variety of the \$5 piece, but there are really two, large and small head.<sup>43</sup> Like the plain edge Ormsby \$5 piece, Adams did not know of the Wass, Molitor 1855 \$10 piece when he composed the 1912 monograph *Various Californian Private Mints*. After the text had been set he was told of a single specimen, which he mentioned at the end of the monograph.

**J. H. Bowie:** 1849 \$5 piece. Adams did not know of this issue at all, although he listed Bowie's copper pattern dollar. Two specimens of the gold \$5 piece are known, each with an independent pedigree.<sup>44</sup>

<sup>43</sup> Adams 1913, 82. Both varieties appeared in the Garrett Collection sale as lots 942 and 943.

<sup>44</sup> In Butrey 1997, Butrey condemned the Bowie \$5 piece as a "twentieth century fantasy" for two reasons, even though he had never closely examined one. First, ownership by the same man Butrey identified as the primary source for the western and Mexican bars he also condemned as fake. Second because ANS curator Kleeberg found differences between the punches on the unique copper Bowie \$1 pattern and the Bowie \$5 coin. Butrey was unaware that a second Bowie \$5 piece was known that had a pedigree independent of the first. Kleeberg failed to notice that the Bowie \$5 module is nearly 50 percent larger than that of the Bowie \$1 piece and therefore they necessarily required different punches. Unknown to Butrey, the second of the Bowie \$5s had been authenticated by the American Numismatic Association's Authentication Service (ANACS) in 1982. The following year the ANA published the coin in the September 1983 issue of *The Numismatist*. It was later authenticated and "slabbed" by the Numismatic Guaranty Corporation. In 1998, after discussions between the author and authenticators from the Professional Coin Grading Service, the coin was authenticated and "slabbed" by them. Following publication of Butrey's 1997 article, the editor of *The Guide Book of United States*

**California fractional gold coins:** Adams did not mention these at all, even though the *Daily California Alta* of August 25, 1852 described some. Others were found in circulated condition in the 1853 wreck of the SS *Winfield Scott* and still others were illustrated in coin books published in 1858 and 1859 (Breen 1983, 5).

That the firms whose names are found stamped on western bars existed is a documented fact and needs absolutely no further justification here.<sup>45</sup>

*Reason 2.* No one collected western bars before the 1950s because there were none to be had. Buttrey states that before the 1950s no one collected western assay bars because, essentially, they had not yet been made. Buttrey says that B. Max Mehl did not auction any western assay bars, and since Mehl "far out sold anyone else in the private and territorial material," if Mehl did not have it to sell, it was not around to be had (Buttrey 1997, 101).

There are two problems with this statement. First, Mehl did not far out sell anyone else in private and territorial gold. If we use the same data Buttrey did, namely, John Adams' 1982 ranking of American twentieth century auction sales, we find that Adams gives Mehl's sales 11 "grades" of A- or better and 42 of B- or better. Adding all of Mehl's sales Adams gives a grade of C or better to, Mehl winds up with 89 sales ranked by Adams as significant for their territorial gold contents. Turning to Thomas Elder's sales, we find that Adams gives Elder 11 grades of A- or better and 44 of B- or better, two more than Mehl's.

*Coins* included a statement in the 1999 edition that the Bowie \$5 piece was of questionable authenticity. At the 1998 ANS convention in Portland, OR, the editor told me that he had published this opinion because of a "red flag" raised by Buttrey's condemnation. However, in 1982 the *Guide Book's* editor had authenticated the Bowie \$5 piece for ANACS. In 1983, as director of ANACS, he raised no objections when, the coin was published as genuine by the ANA. Beginning in the early 1990s, he had listed the Bowie \$5 piece as an authentic coin in the *Guide Book*. As with the case of the 1786 Brasher Lima Doubloon and western assay bars, the numismatic reasons for the *Guide Book's* delisting of the Bowie \$5 piece are not immediately obvious.

<sup>45</sup> For additional information on western assay firms see Stack's, 11 Nov. 1974 (Gibson) and Stack's, 11 June 1997 (Schoonmaker); Bowers and Ruddy, 18 Mar. 1982 (Clifford); and Daniel Owens, *California Coiners and Assayers, 1849-1863* (in press).

Adding all of Elder's ranked sales together, as we did with Mehl's, we find that Adams ranked 123 of Elder's sales as important for territorial gold, 34 more than Mehl's. Clearly, Mehl did not sell territorial gold more often than anyone else. The one auctioneer who really did outsell everyone else in the field of territorials was Tom Elder who included western assay bars in his sales when they were consigned to him.

The second problem with Buttrey's statement that Mehl did not sell western assay bars is that he actually did sell them when he had them. He just did not have them very often, because they were rare then, as they are today! Judging from his actions, Mehl preferred to sell any bars he did have privately rather than at public auction.

We have already seen Mehl offer the \$14.25 Moffat bar he discovered in 1932 to Garrett. Garrett declined the offer, so Mehl later sold the unique bar to Wayte Raymond. Mehl had had better luck some years earlier, when he sold a Knight & Company \$10.58 silver ingot to Garrett on January 28, 1923. This same bar later appeared as lot 1946 of the March 25, 1981 sale of the Garrett Collection. The same Garrett sale featured two New York Assay Office bars Garrett bought from Mehl's auction sale of December 24, 1926, lots 545 and 546, the former being a gold 1911 bar of the greatest rarity. Mehl offered two bars in his circa 1933 offering of Newcomer's collection (see n. 4 above), the \$16.80 Conrad Wiegand bar described at the beginning of this study, and the \$49.50 Kellogg and Hewston bar that Elder had sold earlier in 1929 (see p. 110 below). On November 4, 1937 Mehl offered Garrett two more bars, one a \$20.30 Blake & Co. Owyhee unparted bar that Mehl called "silver." None of these appeared in Adams' book, of course.

Not only did Mehl sell western assay bars when he wanted, he also collected them. For example, at the 1949 ANA convention Mehl exhibited his collection of unparted assay bars. During the convention, Mehl sold many bars to at least one other collector.<sup>46</sup>

<sup>46</sup> *The Numismatist*, Nov. 1949, 676. The collector who bought some of Mehl's own bars was Art Kagin. "In 1949, I attended the A.N.A. Convention in San Francisco, which commemorated the 100th anniversary of the California Gold Rush. While looking over the various exhibits there, I noticed that several people had Assay Ingots on display. Accordingly, I purchased many of those on display, including a large group owned by B. Max Mehl, the well-known Texas dealer. Mr.

Buttrey places great importance on Mehl's place in American numismatic auction history. Mehl was a towering figure for the years he was most active and more than one contemporary coin dealer has modeled himself after Mehl's example. More importantly, Mehl was only one of many twentieth century auctioneers active before 1950. He may be credited with auctioning more lots of territorial gold coins than anyone else in the 1906-55 period, but he did not sell every lot that included western material. And one should not forget that there were auction sales being conducted years before Mehl appeared on the Texas scene.<sup>47</sup> Reviewing Mehl's auction sales is not the same as reviewing the entire prior auction record. One must conduct a more thorough search through the literature before one can state that western bars were never sold at auction before 1950.

If we look in other sources, including Mehl, for appearances of western assay bars before 1950, we find the following not insignificant listing. If one wonders why there are not even more listed here, it should be remembered, first, that western bars were then and are now both rare and outside the mainstream of American collecting. Second, what follows is based upon a reading of only some of the numismatic

Mehl, as memory serves, had at least a dozen Ingots. He might have sold me as many as twenty. I honestly cannot remember" (private written communication from Art Kagin to Harvey Stack, May 26, 1998). The bars Mehl exhibited were described as "silver assay bars." I have interpreted this to mean silver and/or low gold content unparted bars, which would not have been yellow in color. The bars Art Kagin bought from Mehl included both silver and unparted ones. Other collectors including Edward Ellinger and Don Keefer also exhibited their collections of bars, described in *The Numismatist*, Nov. 1949, 676, as "silver assay bars" and "assay silver bars," respectively.

<sup>47</sup> B. Max Mehl's first sale was 25 Dec. 1903. His last was held on 25 Oct. 1955. He managed a total of 120 sales over a span of nearly 52 years. Thomas Elder's first sale was 5 Mar. 1903 and his last 25 May 1940, for a total of 295 sales in 37 years. Lyman H. Low's first sale was 4 Feb. 1885 and his last was 1 Apr. 1924. He held 195 sales over 39 years. Herbert H. Morey's first sale was 10 Aug. 1896 and his last was 28 Aug. 1922 for a total of 179 auctions in 26 years. Edouard Frossard had his first sale on 6 Sept. 1878 and his last on 11 Nov. 1901, with a total of 176 auctions in 23 years. Samuel Hudson and Henry Chapman jointly and separately had 161 auctions in the 53 years from 9 Oct. 1879 to 17 Nov. 1932. Buttrey appears not to have examined any of these sources save for Mehl's.



literature and auction catalogues printed before 1950. These are sufficient, in the present instance, to show that western bars were, indeed, collected and traded before the 1950s.

**Kellogg & Hewston \$49.50 gold bar:** this first appeared in Elder, 13 Dec. 1929 (Steinhardt, Gutttag, et al.), 975. Elder wrote in the catalogue that this bar had been collected by a "forty-niner" named Steinhardt, who had recently died at age 78. He had been a banker and assayer and Elder knew him personally. Steinhardt's collection also included a Moffat \$16 bar. The bar sold for \$1,750. It later appeared in Mehl's undated fixed price list. Later still, it was offered in a Kosoff FPL, Jan. 1951, for \$8,000.

**Knight and Company \$10.58 silver bar:** this was sold by B. Max Mehl to John Work Garrett on January 28, 1923, and later appeared in Bowers & Ruddy, 25 Mar. 1981 (Garrett), 1946.

**Hentsch & Berton \$7.16 gold bar:** this was first published by Joseph B. Stack in *Numismatic Review* 1, 1 (June 1943). There it was described as then in the Wells Fargo Express Museum in San Francisco, on loan from Mr. George Berton, presumably a descendent of the maker.

**Ward Beecher Silver Mining Company silver bar:** so described and attributed to Nevada, this was exhibited by David Bullowa at the July 26, 1939 meeting of the Bronx Coin Club (*The Numismatist*, Aug. 1939).

**United States Assay Office bar:** described as "U.S. Assay Office of San Francisco Mint bar" with no indication of its metal. This was also exhibited by David Bullowa at the July 26, 1939 meeting of the Bronx Coin Club (*The Numismatist*, Aug. 1939). The use of the words U.S. Assay Office suggests that this was not one of the common San Francisco Mint bars, which are ordinarily stamped "San Francisco Mint."

**Gould & Curry \$42.29 unparted bar:** this was owned by William L. Warren, chief curator at Old Sturbridge Village, who obtained it from his father, a second bar second going to Warren's brother. This ingot was sent to Dr. George Miles, then curator at the American Numismatic Society, who referred Warren to John Ford. Ford bought the ingot on April 18, 1966.

**Gould & Curry \$20.00 silver bar:** exhibited by a Mr. Phillips at the June 27, 1917 meeting of the Pacific Coast Numismatic Society (*The Numismatist*, July 1917).

**Blake & Co. Owyhee \$20.30 unparted bar:** serial no. 1320. This was offered to Garrett by Mehl on Nov. 4, 1937.

**Blake & Co. Poorman Bullion Owyhee \$3.04 unparted bar:** with the Internal Revenue stamp on one side. This appeared in Elder, 22 Jan. 1936, 2666 (miscatalogued as a \$4.04 bar, see Elder's plate). It was later owned by Wayte Raymond, who consigned it to the 1952 ANA sale.

**1869 Blake & Co. Assayers Owyhee I.T. \$6.85 unparted bar:** serial no. 1681. This was shown by Julius Guttag at the February 12, 1937 meeting of the New York Numismatic Club (*The Numismatist*, March 1937).

**Blake & Co. Owyhee \$6.78 silver bar dated March 12, 1867:** with the Internal Revenue stamp on one edge. This was offered for sale by Herbert O. Lindle (*The Numismatist*, Dec. 1936, on p. 1064). It later appeared in Stack's, 20 Apr. 1940, 1008.

**Blake & Co. Owyhee I. T. \$15.27 bar:** priced at \$100, this appears on an invoice dated Sept. 1, 1937 from the St. Louis Stamp and Coin Co. to F. C. C. Boyd. The same invoice also included an unnamed \$5.46 bar priced at \$50 and a 1912 Denver Mint ingot priced \$100.

**A. P. Molitor \$2 silver bar:** a bar so described, with no further information, appeared in William Elliott Woodward, 13 Oct. 1884, 2619. It is untraced.

**A.P. Molitor \$7.52 unparted bar:** this also first appeared in William Elliott Woodward, 13 Oct. 1884, 2620. It was later in Lyman Low, July 1902 (Georg F. Ulex), 536, and in Bowers & Ruddy, 25 Mar. 1981 (Garrett), 1944.

**T. S. & Co. gold bar, 3 oz., 12 dwts:** with "M. K. McMullen" stamped in smaller letters. This was sold in Elder, 23 Feb. 1921 (McMullen), possibly to Edgar Adams.

**T. S. & Col. Silver bar, 22 oz.:** Elder, 23 Feb. 1921 (McMullen).

**Silver \$1 Button:** this first appeared in Woodward 34, 10 Jan. 1881, 1778, described there as a disk-shaped necessity dollar from the San

Francisco gold rush era. It later appeared in Woodward, 13 Oct. 1884, 2617, described as a silver button. It is now untraced.

**Silver \$2 Button:** this also appeared in Woodward 34, 1779, where it was described as a disk-shaped necessity two-dollar piece from the San Francisco gold rush era. It later appeared in Woodward, 13 Oct. 1884, 2616, described as a silver button. Woodward wrote in his 1884 catalogue that this and the preceding were the only such ones that had reached the Atlantic states. It is also untraced.

**E. Ruhling & Co. \$5.40 silver ingot:** first published in Lyman Low, July 1902 (Ulex), 535; later in Bowers & Ruddy, 25 Mar. 1981 (Garrett), 1945.

**1870 E. Ruhling \$3,123.76, unparted bar, 1,630.7 oz.:** serial no. 9680, first published by Wilbur Shepperson, *The Nevada Historical Society Quarterly*, Summer 1969. This massive ingot is inscribed "Für die Verwundeten und Hinterbleibenenden der Gefallenen im Deutsch-Französischen Kriege 1870 vom Staat Nevada. Germany, Battling for Unity and Civilization, Commands the Sympathy of Republican America. We May Not Draw the Sword, But Would Help to Staunch Your Wounds. Virginia [City] Nevada." The bar was sold in a German national lottery. Before WW II, it was on display in a Berlin armory.

**C. Wiegand unparted bar:** serial no. 2077, S. H. Chapman, 21 June 1909 (Jewett), 986.

**C. Wiegand unparted bar:** serial no. 4087, S. H. Chapman, 21 June 1909 (Jewett), 987.

**C. Wiegand \$16.80 gold bar:** this is the ingot already mentioned in connection with the B. Max Mehl ca. 1933 list including the Newcomer collection.

**1874 Nevada City \$10.22 silver bar:** shown by a Mr. Schmall at the March 2, 1938 meeting of the Brooklyn Coin Club (*The Numismatist*, April 1938).

**1869 Savage Mining Company unparted bar:** shown by a Mr. Bauer at the April 20, 1937 meeting of the Westchester County Coin Club (*The Numismatist*, May 1937).

**S. B. Gracier & Sons gold bar:** shown by Clifford Bloom at the July 28, 1948 meeting of the Pacific Coast Numismatic Society (*The Numismatist*, August 1940).

**Harvey Harris \$6.13 unparted bar:** this first appeared in Elder, 11 June 1909, 753.

**Harvey Harris \$6.25 unparted bar:** first published by Edgar H. Adams, *The Numismatist*, Sept. 1911. Owned by a Mr. Kiger of Portland, OR, Adams reported that it had earlier been owned by J. W. Wright of the State Bank of California. Adams called bars like these "assayer's slugs."

**Harvey Harris \$23.24 unparted bar:** first published by Edgar H. Adams, *The Numismatist*, Sept. 1911. Owned by a Mr. Kiger of Portland, OR, Adams reported that it had earlier been owned by J. W. Wright of the State Bank of California.

*Reason 3:* Fakes by association and by lack of historical evidence.

Buttrey's third argument against the authenticity of the western bars is in two parts. The first is one of guilt by association. By stating that the western bars and the Mexican bars derive from the same source and that he had already shown the Mexican bars to be false, Buttrey suggests that the falsity of the latter proves the falsity of the former. This is the "context" argument that Buttrey has used before, in the case of the Tubac ingot, for example. Referring to his study of that numismatic oddity and the plate that illustrated it, Buttrey wrote "All the illustrations on the plate were provided by the same source which was the primary supplier of the false Mexican bars to the market. The context therefore creates some unease when one turns to the unique United States Assay Office pieces..." that were also illustrated on the plate. As if to emphasize the importance he places on this argument, he concluded his paragraph by restating it, writing "I think it is fair to note the association of these examples with two known forgeries—those of Mexico and Tubac." (Buttrey 1997, 97-98) There is not much one need say about such an argument. In history, as in law, it is invalid as a proof.<sup>48</sup>

<sup>48</sup> In his unpublished manuscript discussing the Mexican bars, Walter Breen also found himself troubled by this type of argument. He wrote that "the identities of previous owners are in no way evidential as to either genuineness or falsity of any numismatic items....This needs to be reemphasized owing to remarks by Buttrey, Eric P. Newman, and others, that such items must be judged by (among other

The second part of Buttrey's argument is that neither the Mexican nor the western bars are attested to in the historical or numismatic literature before the 1950s, and that they are, therefore, fabrications.<sup>49</sup> This is another argument *ex silentio*, from the lack of evidence, and we have already seen that an absence of evidence proves or disproves nothing. An argument such as this might make one think twice, however, if it were backed up a thorough review of the available historical evidence, published and archival.

Buttrey's sources for his analysis of the historicity of the western bars are inadequate, confined as they are only to the most basic secondary works and the auction catalogues issued by B. Max Mehl. He did not include references from California newspapers of the 1850s, he did not examine the records of the San Francisco Mint, he did not mention studies of California banking history, he did not include the recollections of pioneer and gold rush era diarists and letterwriters, and he did not refer to any surviving San Francisco business archives. These are the sorts of sources one would ordinarily expect to be searched for references to assayers and their bars, if any could be found. There is, in fact, a notable lack of primary source material to be found in Buttrey's study. One would expect that before a body of numismatic material is condemned as false, all the possible sources that might mention the material should be examined. It is very easy to condemn something as false, but it is another matter altogether to rehabilitate a class of objects that has been so condemned.

The San Francisco Mint was established in 1854 to provide an official United States circulating coinage for the western state. From its earliest days in 1854, customers could bring gold dust, nuggets, or assayed bars (refined or unparted) to the Mint's receiving window and have the bullion melted and refined into mint bars or gold coins, whichever was wanted. The San Francisco Mint routinely received private assayer's bars for melting either into coin or its own refined or unparted bars.

things) 'the company they keep.' Without indulging in personalities, one may still recall that another term for that is 'guilt by association'...." (Breen 1979, 3).

<sup>49</sup> The Mexican bars will be considered below.

The Mint's administrative procedure (simplified) was as follows. The customer brought his gold to the Mint, signed the *Signature Book of Gold and Silver Depositors*, and was given a deposit number for his bullion. The gold was moved to the Assayer's offices, where it was weighed before and after melting, with these two weights recorded by deposit number in the *Tables of Deposits Book*. After melting and refining into either a gold or an unparted bar, the Assayer recorded beside the depositor's name the gold and silver content of the bullion in the *Assayer's Register of Gold Bullion*. Finally, the Assayer recorded the depositor's name, the weight before and after melting, and the form the bullion was made into (coin or bar) in the *Assayer's Register of Deposits of Gold Bullion*. From the Assayer's office, the refined bullion moved to the coining department if it was to be made into coin, where it was also recorded. Once coined, or if delivered straight from the Assayer's office in bar form, the bullion moved to the Paying Clerk's office. There, the clerk received a warrant from the Superintendent's office to pay the owner of the bullion and recorded the date, warrant number, owner's name, and the dollar value of the bullion in the *Register of Warrants for the Payment of Gold Deposits*. For a time in 1854-56, if the owner requested, he received his bullion in mint gold bars, a special warrant was issued, and the *Register of Bar Warrants Paid* recorded the date, warrant number, deposit number, the owner's name, and the value of the mint bar.

The *Registers of Deposit of Gold Bullion* were kept by the Weigh Clerk and record the name of the depositor of the bullion, the type of bullion deposited, its weight before and after melting and refining, and the type of return (i.e., coin or bar) made to the customer. Most of the western assay bars received at the Mint for melting were big ones, 200 ounces or heavier. Only one bar was identified with a name, and no bar received had its date, or fineness recorded by the Mint. The San Francisco Mint had an air of superiority about it from its earliest days. This is reflected in its disregard for recording the names of the bar makers it received for melting, as well as in the very high prices it charged for its services compared to competitor's rates.

The first and second volumes of the Weigh Clerk's Register record receipts of western assay bars from April 3, 1854 to May 31, 1856. The following smaller sized bars are noted as received.<sup>50</sup>

May 17, 1854. A. J. Horton deposits "Bidwell's Bar" of 110.80 ozs. September 12, 1854. Adams & Co. deposits 76.04 ozs. of small bars.

December 29, 1854. R. Peck & Co. deposits 11.38 ozs. of small gold bars.

January 18, 1855. Wells, Fargo & Co. deposits for Leamon, Merrill & Co. 18.82 ozs. of small bars.

January 9, 1855. Mr. R. Bernhard deposits a small bar of 6.05 ozs.

January 9, 1855. Drexel, Sather & Church deposit "Assayed Bar No. 48," which is rejected as "containing base metal."

September 27, 1855. Wells, Fargo & Co. deposits for a B. Clayton a 12.53 oz. bar.

October 26, 1855. Mr. G. Travis deposits 41.67 ozs. worth of bars and California coin.

<sup>50</sup> National Archives, Record Group 104, Records of the San Francisco Mint, *Registers of Deposit of Gold Bullion*, vol. 1 (April 3, 1854), vol. 2 (April 4, 1854). Two concurrent registers of deposit were kept by the mint, probably to allow for an audit at the close of business each day. The records of the San Francisco Mint were described by Tomas Wadlow et al. in an inventory list compiled ca. 1965 but intended for internal use. In 1982, many of the mint's records were destroyed. One of the documents destroyed was the Weigh Clerk's Bullion Ledger, June 1854 to March 1873. A new inventory list was compiled in October 1995 and is available to the public. Bars deposited at the San Francisco Mint, recorded in the *Registers of Deposit of Gold Bullion*, were assayed bars, meaning parted (rarely) and unparted bars. The gold and silver in any bar received by the mint had already passed through the stamping, reducing, and cyaniding processes at the mines, where the gross base elements such as lead would have been removed. In varying forms of refinement, bars made their way through normal commercial channels to the private banks and assayers in San Francisco, as well as to the mint. Bars were not deposited at the mint for melting due to any lack of an alternative assayer. Rather, they were deposited there because only the mint could easily turn their contents into coin. Private assayers who promised returns of deposits in gold coin had to compete with every other assayer and with city's banks. In the final analysis, it was the mint's monopoly on coinage production that drove most of the private assayers out of business. Readings taken by the author from the *Registers of Deposit* were corrected as a result of discussions between the author and the ANS editorial staff.

October 26, 1855. V. Marzion & Co. deposit 16.40 ozs. of bars.

November 19, 1855. Henry Hentsch deposits a 76.82 oz. bar.

March 6, 1856. Justh & Hunter deposit a 39.07 oz. bar.

July 7, 1858. Braverman & Levy deposit a 7.75 and a 15.98 oz. unparted bar.

The first entry refers to a bar made at Bidwell's Bar, a mining camp on the Feather River. These references show, first, that "bars," were routinely received for melting by the Mint and second, that the bars ranged in size from large ones of the sort found in the wreck of the SS *Central America* down to bars as small as 6.05 and 7.75 ounces. The Mint did not discriminate based upon size. As long as the customer was willing to pay the Mint's high refining and assaying charges the size of the deposit was irrelevant.

The *Assayer's Register of Gold Bullion* was kept by the mint's assayer and can serve as a cross check on the Weigh Clerk's *Registers of Deposit of Gold Bullion*. It lists the weight of each gold and unparted bar received at the Mint for melting and refining. During the period January 1 to March 31, 1856, for example, a total of 153 refined and unparted bars weighing 39,913.61 ounces {2,494.6 lbs., or about one and a quarter tons) was melted at the San Francisco Mint. The largest was a massive bar weighing 3,256.00 ounces. The smallest weighed 8.07 ounces. Only four bars weighed about a pound or less (16.92, 12.63, 10.05, and 8.07 ounces), or 2.6% of all bars melted this quarter. It did not pay to melt small bars at the Mint, for reasons that will become apparent later, and this explains why so few show up in this record. Nearly 10.5% of all the bars melted weighed less than two pounds. Incidentally, in this same three month period, the Mint also melted 2,502.53 ounces (156.4 lbs.) of California gold coins, mostly USAOG \$10's and \$20's.

This assayer's register book shows that nearly one in three western assay bars received for melting by the San Francisco Mint weighed less than a pound. One in 10 such bars weighed less than two pounds. In one quarter of one year, alone, the Mint melted four small western assay bars and 16 medium sized ones. If this rate of melting held for the whole year 1856, then 80 such western assay bars would have been melted in that year. If this rate was typical of any year at the Mint, then one can imagine more than 1,300 such bars melted at the Mint



from 1854 to 1870. Since the Mint was neither the cheapest nor the only place one could bring bars to be melted and assayed, one wonders how many thousands of small western bars might exist, today, if none had been melted?

The San Francisco Mint was accustomed to receiving bars of all sizes for melting into coin. The Mint would pay its depositors in bars if they so wanted, but if bars were wanted the bars it paid out were almost always large ones and the payees were almost always important members of the banking community. The entries in the *Register of Bar Warrants Paid, 1854-1856*, include such names as Wells, Fargo & Co., Page, Bacon & Co., Drexel, Sather & Church, Stephen N. Burpee, A. Solomon, and B. Levy. Interestingly, the second volume of the *Assayer's Register*, for the period 1856-58, shows only a few of the names from 1854-55 still remaining in the register (Wells, Fargo & Co., Drexel, Sather & Church). The number of bar warrants paid out also declined. Some typical bar values given are May 20, 1854, warrant no. 44 paid to Wells, Fargo & Co. for McLean valued at \$2,387.85, while on January 11, 1855 Wells, Fargo & Co. received a \$2,445.91 bar on behalf of Baldwin & Company.

The Mint charged high prices, far above the market for having bars melted, refined, and parted, and it did not really pay to have the job done there in many cases. Consequently, the Mint's customers for such services tended to be either those who knew no better or those who required the comfort factor, so to speak, of dealing with a governmental institution.

In 1854, the San Francisco Mint charged 50 cents per \$100 value for making a refined bar for a customer.<sup>51</sup> The following year, the Mint instituted a sliding scale of charges for parting gold and silver and refining the gold based upon the fineness of the metal.<sup>52</sup> From then

<sup>51</sup> August 4, 1854 Mint Director H. Ross Snowden to San Francisco Mint Superintendent Birdsell. National Archives, Record Group 104. Records of the San Francisco Mint, *Copies of Letters and Telegrams Received, 1853-1876*.

<sup>52</sup> *Gold and Silver Tables Prepared at Kellogg, Hewston & Co.'s Assay Office and Chemical Laboratory*. San Francisco: Abel Whitton, 1860. In the collection of the California Historical Society, the charge tables mentioned were printed on a sheet and pasted into the front cover. While undated, it is almost certainly from 1855. This particular one was Wells, Fargo & Co.'s office copy.

on, for parting the Mint charged from 3 to as much as 14 cents per ounce, while the charges for refining ranged from 3 to 10 cents. In addition, anyone wanting their refined metal made into U.S. coin paid another half percent ad valorem. By contrast, Kellogg and Hewston's charges for parting and refining, combined, were 2.25 to 8 cents per ounce based upon fineness, in return for which the customer received a Kellogg & Hewston refined assay bar.

After 1854, market prices in San Francisco for parting and refining dropped from those of 1850-53, when Moffat and Company could charge 50 cents per ounce, or Kohler could demand 1.75% ad valorem, or Curtis, Perry and Ward charged 1% ad valorem for bars (for coining gold into \$10 and \$20 USAOG pieces they charged from 1.75 to 2.25% in 1853) (Adams 1913, 50). The San Francisco Mint seems not to have adjusted its fee schedule, and while it believed (like Curtis, Perry, and Ward had before) it had the edge since only the Mint could strike U.S. coins, it could lose business to independent assayers who charged lower prices for parting and refining. If one of Kellogg and Hewston's customers wanted their gold turned into coin, the Mint's half percent coining charge was simply passed on to the customer, without a markup.

In addition, the Mint's own records shows it catered to the bigger clients of the day, to Adams and Company, Drexel, Sather, and Wells, Fargo and Company, for example. Most of the bars it received were large and most of the ones it paid out were, too. The smaller depositor, whether he was in San Francisco or was at the minehead and forwarding his bullion to the city, had nowhere else to take his "goods" except to the private assayers, whose charges were considerably lower, especially for small amounts of bullion.

Charles T. Blake was a gold buyer for Wells, Fargo and Company in California in the late 1850s and the first half of the 1860s. He described how his business worked in a letter to his parents (Blake 1863). Blake wrote (pp. 34-39) that one problem with the Mint was the long time it took for one's gold to be assayed. "After buying the dust it is generally thrown into two lots, one to send to an assay office, the other to go to the mint. If you send gold to the mint you have to wait from ten days to a fortnight for your returns. If you send to an assay office you get your returns within twenty-four hours." More importantly, however, was the loss incurred by the owner from the Mint's charges. On gold

between 800 and 900 fine, which encompassed the average lot of California gold, the Mint's parting charge was 14 cents per ounce. Blake found by experience that it was actually cheaper to send assayed gold bars to Europe for coining than to send them to the San Francisco Mint, accruing a profit of 13 cents per ounce on bullion versus coin.

Once the gold dust or nuggets had been assayed, Blake wrote "The assayer now returns the bar to the depositor with a memorandum of the weight of the gold before melting, or its weight after, its fineness, the value of the bar and of the chips taken from it for assay [i.e., the small pieces cut from the corners of bars], and of his commissions. The value of the chips is deducted from the commissions paid him. Almost all the country dealers in dust have made arrangements with bankers below who act as their agents, depositing the dust with the assayers, and receiving and selling the bars. They credit their customers with the amount of the bars at the current rates the day they receive them. Their profit is made either in holding on to the bars until steamer day or in advances made to gold dust customers on their dust."

One of the until now unanswered questions about the purpose of assay bars was how their owners could turn them into ready cash. Clearly, a bar could not easily be cut into smaller pieces to pay for, say, a drink at a bar or a new suit of clothes. Bars could be turned into coin at the San Francisco Mint, as we have seen, but that was only at a loss to their owners. Blake's letter shows that independent gold buyers had the dust they bought assayed into bars. The bars were sold to city bankers, who credited the sellers' accounts with the values of the bars. The bankers held the bars pending shipment to the Mint for coining (if below 700 or above 950 fine), to private assayers for consolidation into larger bars or directly on to New York and Europe on steamer day, for coining if the bars were of average California fineness.

Blake (34-9) notes that "When the amount of gold is ascertained, the name of the assayer and the number of ounces and hundredths, the fineness and value of the gold, are stamped on the bar and sometimes, though not always, the value of the silver in the bar." Not all assayers were equally well respected, and reputations could vary. According to Blake (34-9), "There are only four or five assayers in

San Francisco whose stamp will sell bars at current rates. A bar with a new name on will only sell under a guarantee from some respectable house and only then at a discount from the ruling price."

For a San Francisco banker, having a stock of western assay bars on hand could mean the difference between surviving a run on the bank or ruin. In February, 1855, following the failure of the famous banking house of Page, Bacon and Company and the suspension of business by their rival Adams and Company, a run on the San Francisco banks began.<sup>53</sup> William Tecumseh Sherman, who would nine years later command all Union forces in the western theater, was then a partner in the San Francisco banking firm of Lucas, Turner. Sherman described what happened at his own bank during one serious run.

In going down to the bank that morning, I found Montgomery Street full; but, punctually to the minute, the bank opened and in rushed the crowd. As usual, the most noisy and clamorous were men and women who held small certificates; still, others with larger accounts were in the crowd, pushing forward for their balances. All were promptly met and paid. Several gentlemen of my acquaintance merely asked my word of honor that their money was safe, and went away. Others, who had large balances, and no immediate use for coin, gladly accepted gold bars, whereby we paid out the \$75,000 of bullion, relieving the coin to that amount.<sup>54</sup>

Sherman does not say what sort of gold bars he paid out to his customers on this occasion.<sup>55</sup> His bank had enough of them, however, to cover a fortune's worth of deposits.

Blake's evidence shows how assay bars fit into the banking economy of mid nineteenth century California. They were temporary stores of value meant only to confine their wealth in bar form until they could

<sup>53</sup> In the crash of the first half of 1855, Adams & Co., Wright's Miner's Exchange Bank, Robinson & Co., Burgoyne & Co., and Argenti & Co. all failed.

<sup>54</sup> Armstrong and Denny 1916, 72. Sherman's bank went broke in 1857. He published his memoirs in 1875.

<sup>55</sup> Speaking of 1853, a few years earlier, Sherman wrote "We (Turner and himself), of course, had to remit bullion to meet our bills on New York, and bought crude gold-dust, or bars refined by Kellogg & Humbert or E. Justh & Co., for at that time the United States Mint was not in operation," see Cross 1927, 168.

be melted and turned into coin, either American or European. Such bars were never intended to last long or serve as a private coinage medium or expedient. That some of these bars survive, today, is a wonder of chance, not of planning.<sup>56</sup>

The private assayer found a place in the gold market by dealing in the range of finenesses that the San Francisco Mint typically overcharged for its services. As a gold buyer, Blake was familiar with a handful of assayers whose reputations for accuracy he could trust. There were others, however, whose inexperience or lack of exposure in the market made their bars worth less, but nevertheless still tradable given guarantees.

One of the best known assayers of his time, and undoubtedly one Blake would have included among his "four or five" respected assayers, was the Hungarian expatriate and freedom fighter Count Agoston P. Molitor. He had studied mine engineering in Europe, been exiled from his homeland for his role in the social upheavals following the troubles of 1848, and had emigrated to California in 1851. Molitor was skillful at using the press to further his business, spreading what amounted to press releases in the San Francisco papers which eagerly printed them. When Molitor and his compatriot Wass began striking their own gold coins, in January, 1852, Molitor invited the *San Francisco Herald* to come and watch the minting process. The resulting stories were very favorable to the firm of Wass, Molitor, reading more like a publicity release than a piece of reporting.

Some seven years later, Molitor again returned to the press, this time to offer his reminiscences of the early days of the assaying business in San Francisco (Molitor 1859). He wrote that his story would not be about mining gold. Rather, he said, "We intend to confine our observation principally to the shining metal after its extraction from its

<sup>56</sup> Some early California banking houses survived long after the gold rush era had come to an end. It is possible that some western assay bars survived in the holdings, private or otherwise, of such long-lived banks. We know of two bars that actually did survive this way. The \$49.50 Kellogg and Hewston bar was saved by banker and assayer Steinhardt and the \$7.16 Hentsch and Berton bar was owned by George Berton and was even on display in a San Francisco bank, Wells Fargo and Company, in 1943 (Cross 1927, 227, 228-29, 230, 243-44).

mother earth and to accompany the same through all its phases of purification and valuation until we arrive at its highest point of perfection, when assuming the shape of that most powerful agent in our present state of civilization—money.”

Once the gold had been received over the assayer's counter, Molitor wrote that “The following may stand for a faithful description of a melting operation, as done in every well conducted assay office. After being duly weighed and entered into the deposit-Book, the parcel of gold dust, furnished with a ticket containing the number of the deposit and the weight, is delivered to the melter of the establishment.” After melting and removal of the slag by hand from the top of the molten gold, the metal was poured into a mold. Molitor continued “The ingot-mould, made of cast iron, is commonly an elongated hollow square, slightly tapering towards the bottom, and with smoothly polished sides.” Not all deposits of gold were homogenous, and Molitor noted that “In case a parcel subjected to melting should consist of heterogeneous kinds of gold, such as dust, coin, and bars of different fineness, all mixed together, the melted metal must be shirred [i.e., homogenized by stirring] before casting which is done with a short stick made of the same material as the melting pots.” After melting and cooling, the bars are cleaned, dried, and weighed.

Next, the assayer had to establish the weight and fineness of the bar he had cast. Molitor described that process as follows. “Two small pieces are cut off from the opposite corners of each bar and wrapped into the same ticket, which accompanied the gold to the smelting room, and on which, as we have seen, the number and weight of the deposit have been written.” Two small pieces of each of these clippings, “let us say 10 grains”, were weighed carefully. One was wrapped in a small square of lead, to which had been added silver and a smaller amount of copper. This was then melted, the copper and lead drew away impurities from the gold and silver, and the button of molten gold-silver was parted. The remaining gold was pure. It was weighed again, the second weight compared to the first weighing, and the same melting operation was conducted on the second chip. The weights of both chips were compared, and if they were in agreement after assaying then the bar they were taken from was considered to have been correctly assayed. If they did not agree, then a third chip was taken from the bar and the process was repeated.

Echoing the evidence of Blake's letter we read earlier, Molitor describes how assayed bars are valued and exchanged in San Francisco. "In the private assaying offices of this city the bars are marked on their back with the running number, the stamp of the firm, the weight in ounces and their decimals, the fineness in thousands, and the value in dollars and cents. In this shape the bars are issued as assayed bullion. Considering the subsequent expenses for working up these bars into coin in some Mint or another, we find it quite natural that they have to fall under a certain discount when exchanged for cash. It must be considered, besides, that several days are required, sometimes as much as a fortnight, till coin returns are made for deposits in the U.S. Branch Mint in this city, whence a certain amount has to be calculated as interest at the current bankers rates. This discount depends principally on the quality of the bar."

Eckfeldt and DuBois did not know of Molitor and his partner Wass, of course. Adams knew of their coins, as did Raymond, but neither man knew of Molitor working by himself. Using Buttrey's criteria, any bar bearing Molitor's name on it must be a counterfeit made in the 1950s. Yet, we have the evidence of the \$7.52 unparted bar made and signed by A. P. Molitor, one that has only been seen publicly twice since 1884. That bar bears all the markings that Molitor said he usually put on bars, such as the running number, the overall weight of the bar in ounces, the values and finenesses of the gold and silver in the bar, and the assayer's name, A.P. Molitor. There is one other marking on the bar that has escaped most observers, partly because it is obscured by being double punched over a cooling flaw. It is a feature found on almost every assay bar made after June 30, 1864, however, when the Internal Revenue Commission was established, the forerunner to the IRS.

The IRC, as it was then, was established to provide a source of revenue to the Union in its war against the Confederacy. The Act of June 30, 1864, which was renewed into the 1870s, long after the war it was supposed to support was over, contained provisions that affected every assayer who was not afraid of falling afoul of the government. Section 78 of the act provided that assayers buy government licenses to ply their trades, the fee for the license to be set by the value of the bullion they assayed in any one year. The cheapest license fee was

\$100 for assayers who refined \$250,000 worth of bullion or less. The most active assayers paid \$500 for their licenses. More importantly, section 94 of the act, entitled "Specific and ad valorem Taxes upon Articles, Goods, Wares, and Merchandise," stated that "On Bullion in lump ingot, bar, or otherwise, a tax of one-half of one percentum ad valorem, to be paid by the assayer of the same, who shall stamp the product of the assay as the Commissioner of Internal Revenue, under the direction of the Secretary of the Treasury, may prescribe by general regulations" (Emerson 1867, 78, 105).

Besides being required to obtain a government license, western assayers after June 30, 1864 also had to obtain an official Internal Revenue Commission stamp. This stamp was to be placed on all assayed bars, as evidence that the assayer had paid the half percent tax on the value of the bars he made. The writer has so far found no evidence showing how the provisions of the law were to be applied. From the surviving bars, however, it appears possible that assayers were provided with a stamp of uniform size and design which they were to use in their business. How assayers declared the value of the bullion they assayed annually and what proof they were required to present is still unknown. The law seems open to circumvention in several ways, not the least of which would be failure to declare the full amount of the bullion assayed in a year. That some bars survive that were made after 1864 but do not have an IRC stamp shows that not all assayers upheld the law.

Every western bar seen, with two exceptions, that has an IRC stamp on it has the same sort of stamp. It is the same one seen on the \$7.52 A. P. Molitor bar described earlier. This stamp is a circular logotype punch with U.S. INTR. REVENUE around a centrally placed Union shield with scalloped left and right sides. There is a set of scales above the shield, the scale pans hang down flanking the shield, and there is a large star below the shield.<sup>57</sup>

<sup>57</sup> The exceptions are the silver Knight & Company ingot B. Max Mehl sold to John W. Garrett on January 28, 1923. On this bar, the IRC stamp is rectangular and shows the amount of the tax paid as 5 cents. Another silver bar, made by Van Wyck & Company, appeared at the 1998 ANA convention in the possession of a west coast dealer. It does not bear an IRC seal, simply the statement 10C TAX



From the first, there was confusion about how to apply the new law, so it may not be surprising that some bars do not have an IRC stamp. The San Francisco Mint was as much perplexed with the new law as any private assayer might have been. In the first place, the Mint did not at first know what the stamp was supposed to look like. On November 1, 1864, four months after passage of the IRC Act, the Director of the United States Mint, James Pollock, wrote to the Superintendent of the San Francisco Mint, R. B. Swain, saying that he had sent a copy of Swain's letter to Pollock, requesting a description of the Internal Revenue Commission stamp, to the Commissioner of Internal Revenue, and was awaiting a reply.<sup>58</sup>

More confusing was how the new law was to be applied to bars assayed at the Mint. In a letter dated at Washington November 25, 1867, Thomas Harland, Deputy Commissioner of Internal Revenue, wrote to D. N. Cheeseman, Treasurer of the U.S. Mint at San Francisco, saying:

Your letter under date of May 29th, enclosing copy of a letter addressed to R.B. Swain Esq by Louis A. Garnett Esq. Superintendent of the San Francisco Assaying and Refining Works was duly received.

Mr. Garnett raises the question whether bullion which has been assayed and on which an Internal Revenue tax has once been paid, is subject to any tax when the same is re-assayed or further refined, and also whether bullion sent to the United States Mint to be coined, bearing the Internal Revenue Stamp as evidence that the tax has been paid, but having neither the fineness nor value stamped upon the bar or ingot is liable for any additional tax before it leaves the Mint.

PAID stamped into one edge. The \$7.52 A. P. Molitor bar Garrett bought from Woodward's sale of October 13, 1884 bears the standard round IRC stamp, with no indication of the tax amount paid. That bar is now the property of John Ford. It is possible that individual assayers were allowed to make their own IRC stamps, as long as they adhered to a strict form. Why the Knight and Company and Van Wyck ingots differ from the norm is unknown.

<sup>58</sup> Unfortunately, neither Swain's original letter nor a reply from Pollock is preserved in the National Archives, Record Group 104, Records of the San Francisco Mint, *Copies of Letters and Telegrams Received, 1853-1876*.

In answer to these inquiries I have to say that the tax levied upon bullion is upon its production, to be paid by the Assayer, and not upon the process of assaying or refining. The special tax covers the process of assaying &c.

On the production of gold or bullion it is clear that the law contemplates the levying of a single tax only, of one half of one percentum ad valorem.

When this tax has once been paid, and the assayer furnishes evidence of the fact, no additional tax is to be assessed or paid for re-assaying or further refining. The Internal revenue stamp upon the ingot or bar is prima facie evidence of the payment of the tax except to the Assessor, and whenever bullion is re-assayed it must be re-stamped before any person can sell, transfer, transport, exchange, export, or deal in the same.

When refined gold is deposited at the mint for coinage, I can see no advantage to be derived from stamping the weight, fineness, and value on each bar deposited, and if the requiring of these marks necessitates a delay of one day in making the deposit as represented by Mr. Garnett, you will accept refined gold deposited at the Mint for coinage, without the weight, fineness, and value, but simply with the revenue stamp indicating that the Internal Revenue tax has been paid, and the name of the Assayer and refiner stamped thereon.

Presumably, this communication allowed the Mint to proceed with its business of refining and parting western bars without the worry of obtaining a stamp and charging its customers the half percent tax. Private assayers were not so lucky, and their compliance with the new law could become a new burden. It is interesting to note, however, that Charles T. Blake, whose account of stamping western assay bars is otherwise quite detailed, does not refer to the IRC stamp being affixed to the bars he bought.

We have seen that the historical existence of western assay firms is a documented fact. Firms such as Blake and Company, Conrad Wiegand, A.P. Molitor, Knight and Company, Gould and Curry, actually existed and operated as assay firms. We have read the first hand report of one of these assayers (Molitor), which told us exactly how he went about his business of making western bars. We have seen that assay bars of

all sizes, small to enormous, were commonplaces in the bullion business in the 1850s and 1860s. We have read the story of one such bullion buyer, and have seen how assay bars saved a well known historical figure's banking business in 1855. We have seen that the San Francisco Mint routinely accepted such bars for melting and coining, and that thousands may have been lost to future collectors in this way. We have seen that some bars managed to escape the melting pots and that a handful of these bars is actually attested to in the published records of American collecting. The overwhelming weight of the written historical evidence proves that western assay bars were common 140 years ago, that most were melted as they were meant to be, and that those that are known today are rare lucky survivors.

Is there any other evidence that can be examined that might point to the authenticity of the western bars? There is. As Buttrey expressed it, "the point about [lack of] documentation might not matter so much, since the bars are their own documentation" (Buttrey 1997, 99). It is time to let some of the western bars speak for themselves.

In March, 1997, a series of analyses was conducted at the Cambridge Accelerator for Materials Science, Division of Applied Sciences, Harvard University. The objects tested included the unique \$35.80 unparted ingot made by Augustus Humbert, an 1855-S regular issue \$20 piece made at the San Francisco Mint, an 1853 Humbert USAOG .900 Fine \$20 coin, one of the controversial 1853 Humbert USAOG Prooflike \$20 piece with a stated fineness of .900, and an 1851 Humbert USAOG .880 Fine \$50 coin. Using proton induced x-ray emission (PIXE) apparatus, the following averaged normalized readings were obtained from the samples.

Table 1  
PIXE Analyses of Four Western Coins and a Western Bar

Type	Gold%	Silver%	Copper%	Iron%
\$35.80 Humbert bar	78.489	18.195	3.923	.121
1855-S \$20	90.388	.658	8.829	.098
1853 USAOG \$20	91.501	7.694	.445	.282
1853 USAOG "Franklin" \$20	92.387	6.499	1.019	.063
1851 USAOG \$50	89.971	8.230	1.275	.168

The Humbert bar is obviously one of those unparted bars the San Francisco Mint was later also permitted to issue. It shows a high gold to silver ratio with a low gold content but one that is still in the range Eckfeldt and DuBois found for California gold, 714 to 957 parts per thousand. The copper content, which may not be native to California gold, was probably added by Humbert as a strengthener. This is in keeping with Eckfeldt and Dubois' observation (1850) that Moffat & Company added about 4.5% copper to their gold alloy, to increase its wear strength.

The iron content is typical of most western gold, California's in particular, and was also remarked by Eckfeldt and DuBois in 1852. It is, however, lower than that reported by Eckfeldt and Dubois in 1850 in the \$10 gold coins of Moffat & Co. they assayed (which showed an average of 0.3-0.4%). The average iron content in the 1853 USAOG regular \$20 coin, 0.282%, is close to the low end of the 0.3-0.4% range reported by Eckfeldt and Dubois in 1850 as typical of native California gold.

A. P. Molitor also remarked on the iron content of California gold, writing "In the alluvial soil it [i.e., gold] almost invariably is accompanied by Protoxide of Iron commonly called Black sand which is probably nothing else than preexistent Iron pyrites in a decomposed state." He went on to write "In the alluvial grounds, commonly called Placers, by far the greatest part of California gold is found." Interestingly, Molitor further noted that the silver in California gold bars, if of sufficient quantity, could pay for the coining charges, making a bar with a high silver content and a gold fineness of 820 worth as much as a bar of 880 to 900 gold fineness but with a low silver content, especially on the New York market.

The fineness stated on the 1853 USAOG "Franklin" \$20 coin is 900 parts per thousand gold. The average reading for gold content showed 924 parts per thousand, higher than expected. The silver content is lower by about 1% than that seen on the regular 1853 USAOG \$20 coin, but it is still much higher than that seen on the 1855-S \$20 piece. The average amount of copper measured in this coin is nearly identical with that found in the 1851 USAOG \$50 coin. The average iron content is significantly lower than those seen in all other tested specimens known to have been made from native California ore. This

is the only coin among the tested specimens to show such a distinction in this trace element.

The stated fineness on the 1851 USAOG \$50 piece is 880 parts per thousand gold. The average reading for gold content showed 899 parts per thousand, higher than expected. Assays conducted by Eckfeldt and Dubois in 1853 showed that the stated finenesses of the 1851 USAOG \$50 coins were accurate. This shows that the finenesses of Humbert's coins were not all as closely controlled as they could have been. The average silver content is high, about on a par with that seen on the regular 1853 USAOG \$20 coin. The average copper content is higher than found in native California ore and must have been added by the assayer to strengthen the coin. The average iron content is 0.168% and iron readings taken at individual places on the coin accord well with those seen on the Humbert bar and the 1855-S \$20 piece, they are slightly lower than those seen on the regular 1853 USAOG \$20 piece, and they are more than twice as high as those seen on the "Franklin" 1853 USAOG \$20 coin.

A further series of analyses of western bars was carried out at Harvard in May 1998. Using the same apparatus and software, a group of 11 silver and gold western bars was tested, along with three Mexican bars which will be discussed later in this paper. Each bar was tested at two points on each face for a total of four points. Readings were summed and averaged. The average readings were as follows.<sup>59</sup>

Table 2  
PIXE Analyses of 11 Gold and Unparted Western Bars

High Silver Content Bars						
Bar Maker and Value	Silver%	Gold%	Copper%	Iron%	Zinc%	Lead%
Wiegand \$1.62	96.7	2.9	.10	.10	.016	.031
Blake & Co. \$6.81	98.5	1.2	.01	.01	.005	.07
Molitor \$7.52	86.9	11.3	1.5	.013	.018	.13
Knight & Co. \$10.58	94.9	.03	4.6	.02	.01	.30
Gould & Curry \$42.29	96.9	2.0	.01	.04	.52	.35

<sup>59</sup> Detection limits and figures for first standard deviations have not been included in order to simplify these tables. In every case the limits are extremely small and the standard deviations are insignificant and for the predominant elements do not materially affect the data.

## High Gold Content Bars

Bar Maker and Value	Gold%	Silver%	Copper%	Iron%	Zinc%	Lead%
E. Posen \$43.31	62.4	32.5	4.5	.43	.05	0.0
Blake & Agnell \$23.30	85.7	13.7	.14	.33	.07	NT
Humbert .998 Fine	99.8	0.0	.02	.09	0.0	NT
Wiegand \$36.42	79.5	16.1	3.7	.59	0.0	NT
Eagle Mining Co.\$144.28	82.1	11.6	1.6	4.4	0.0	NT
Knight & Co.\$148.39	99.6	.11	0.0	.16	0.0	NT

Working with the high silver content bars, first, and comparing the finenesses as stated on the bars to the actual measurements, we find the following:

Table 3

Comparison of Finenesses as Stated on the Bars and as Measured

## High Silver Content Western Bars

Bar Maker	Stated Fineness		Measured Fineness	
	Silver	Gold	Silver	Gold
Wiegand \$1.62	.97	.27	.967	.29
Blake & Co. \$6.81	.979	.011	.985	.012
Molitor \$7.52	.840	.108	.869	.113
Knight & Co. \$10.58	.939	NS	.949	.03
Gould & Curry \$42.29	.971	.192	.969	.20

It should be very obvious that each of these bars contains what it says it does, within reasonable limits. The differences between the stated finenesses and the measured finenesses are so small as to be trivial. They could not have been detected in the field and would have required a wet assay (i.e., cutting a corner off a bar and melting it) to detect in an assayer's office. The differences, such as they are, would not have amounted to much, if anything, in terms of the actual dollar values of these bars.

Table 4  
Comparison of Finenesses as Stated on the Bars and as Measured

Bar Maker	High Gold Content Western Bars		Measured Fineness	
	Stated Fineness		Gold	Silver
	Gold	Silver		
Posen \$43.31	.584	.342	.624	.325
Blake & Agnell \$23.30	.916	NS	.857	.137
Humbert 998 Fine	.998	NS	.998	.0
Wiegand \$36.42	.801	.119	.795	.161
Eagle Mining \$144.28	.841	NS	.821	.116
Knight & Co. \$148.39	.982	NS	.996	.01

Once again, the differences between the finenesses as stated and as measured on the high gold content bars are small. In one case, there is no difference, at all. The other gold differences range from 0.006 to 0.058, detectable amounts in the lab, only one in the field. The Blake & Agnell bar states only that it is "22 Carat," equivalent to .916 fine. Its difference is the largest measured.

These various analyses show several things. First, that the bars contain essentially as much gold and silver as they claim to. If the bars are real, one would expect no less than that. If they were fake, then one must assume that they were made by a faker who could accurately predict in the early 1950s that one day there would be easy, accurate, and non-destructive scientific tests for metal content that would show his bars were fakes unless he made the stamped values on the bars actually match the metal contents in the bars. Second, the results show that these bars reflect what one would expect to see in analyses of such objects if they were really made from western ores. In other words, the metal that made these bars was not made by melting U.S. or foreign gold or silver coins. It was either mined from the ground and refined in the nineteenth century or it was specially mixed by someone in the early 1950s. If it were specially mixed, the maker had to have been an assayer. If good historical methodology prefers the simplest argument that adequately explains all the facts, then the analyses of these western bars show they are genuine.

*Reason 4: Fakes by association and by lack of standardized form.*

Buttrey's fourth argument against the western bars is also in two parts. The first, another recourse to the "guilt by association" argument he raised before, has already been dismissed as unhistorical. The second part, that the western bars are fake because, like the Mexican bars, they are stamped with a myriad of letter and logotype punches and are not all in one standardized form is not a valid argument at all. It assumes that the shape and form of a newly discovered class of objects should exactly fit our preconceived notions of how the objects should have been made and how they should look today, even though we may never have seen a representative example before.

Assayers were in business to make a living. Their biggest asset was their reputations, as Charles Blake has told us. Unsuccessful assayers might try to copy the styles of more successful ones, but surely not the other way around. In other words, market forces would tend to encourage different styles. Secondly, what went onto a bar was not what the assayer wanted to put on it, but what the customer asked for or the market demanded. We have read this time and again, in Blake's letter and in correspondence from the San Francisco Mint. Thirdly, contemporary evidence tells us there was no standard form for stamping these bars. A. P. Molitor did describe what seems to have been a regular practice with particular data stamped onto a bar, but Molitor was an assayer of considerable sophistication. Charles Blake tells us that the silver content of a bar might be stamped on it, but not always. The Deputy Commissioner of Internal Revenue told the San Francisco Mint that he saw no reason why assayed bars deposited for coining should have their weight and fineness stamped on them. He also acknowledged the Mint regularly received bars with neither their finesses nor values stamped on them. There was no single standard then for what had to be stamped on a bar, and we need not look for one. Lastly, the western bars that can be traced back beyond 1950 show us that they were stamped in many different ways, further proving a lack of standardization. There is one feature to these western bars, however, that does appear to be consistent from one to another, at least for most of those made after June 30, 1864, and that is the presence of the IRC stamp as required by law.



*Reason 5:* Western bars are not in the *Guide Book*.

This is the sole argument Buttrey makes that is absolutely correct as stated. The only western bars now in the standard collector's guide to U.S. coins are the few publicized ones from the wreck of the SS *Central America*. This argument need not detain us long. The *Guide Book* is not compiled for numismatic scholars or specialists and it should not be relied upon as if it were. Rather, it is intended as a general price guide for collectors. The *Guide Book* is compiled from information supplied to its editors by many different outside sources, the present writer being just one of them. The information in the *Guide Book* is only as good as its editorial staff can make it. They do a fine job in providing information to new and middle level collectors, and have done so for many, many years. Sometimes, it seems, the editorial staff delists items from the book with the interests of collectors at heart, but without solid numismatic evidence for doing so.

The *Guide Book* is a fine handbook for collectors. Given its purpose, its intended audience, and the way it is compiled and edited, it is surprising to find its editorial decisions cited as authority in a paper purporting to be scholarly.

*Reason 6:* The western bars are not big, professionally made ones like those from the SS *Central America*.

This is Buttrey's final argument against the western bars. Since the inventory of the bars found in the shipwreck has not yet been published, Buttrey's evidence for his statement must be based on some other sources. Careful reading of his text reveals what those sources are (Buttrey 1997, 106-7, n. 30). The first is the listing of ten bars published in the recent editions of the *Guide Book*. These bars range in weight from a small Blake & Company bar of 4.95 ounces to a massive 208.1 ounce bar made by Kellogg and Humbert. This range is unsurprising, since it echoes what we have read in the San Francisco Mint archives. There are only two bars plated in the *Guide Book* and neither is very dissimilar in the way it was made to any of the western bars. There is the same rectangular shape, the same corners cut off for assay as described by Molitor, and the stamps on the bars are made from a similar combination of logotype and individual letter and numeral punches. There are no IRC stamps, of course, since the ship went down long before 1864. There is nothing in the bars listed in the

*Guide Book* that is different from what we have already learned from documented sources about western bars or seen in the evidence of surviving bars, themselves.

Buttrey's second source for his statement is more elusive, because he does not identify it. He refers only to "twenty bars" whose weights he can read "in the illustration." He gives a weight range of these 20 bars of 12.52 to 232.34 ounces and an average weight per bar of 61.06 ounces, which again fits in nicely with what we have already seen in the San Francisco Mint records. In the absence of an identified source, however, there is not much to be learned from Buttrey's statement that his source shows that "the sea finds are vastly bigger than the recent western bars."

In analyzing the significance of the few bars publicly known to have been recovered from the wreck of the SS *Central America*, Buttrey omits several points salient for his readers' understanding of the true importance of the finds. First, based upon published reports of the total weight of gold recovered from the wreck, it is clear that the number of bars we know about is far smaller than the number actually brought to the surface. The salvors, in their wisdom, have not seen fit to release an inventory of the bars they have recovered. Second, although the salvors will not reveal the names of those who shipped the gold bars, the bars seem to have been mostly the stock of San Francisco bullion or banking firms (essentially the same thing at the time). These bars, accordingly, should be, or at the very least they should include, very large ones, since bank shipments were consolidated into as few lots as possible.

Third, it should be remembered that the SS *Central America's* cargo was "frozen," so to speak, to 1857 and included nothing made after that date, much like Eckfeldt and DuBois as a source about western firms is frozen to 1852. Fourth, the four major firms whose bars were found in the wreck, Kellogg and Humbert, Harris-Marchand, Justh and Hunter, and Henry Hentsch, were not listed by Eckfeldt and DuBois, Adams, or Raymond, a curious omission made even worse for Buttrey's case when one realizes that two of these names were found on western bars that were known to collectors long before they were found on bars in the shipwreck. Fifth, the only firms named on bars found on the SS *Central America* were the ones their shippers used to

assay the gold to be loaded aboard the ill-fated vessel. There were at least ten other assaying firms active in San Francisco in 1857, and if bars from those other firms were not found in the wreck, then it was presumably because their firms were not employed by the shippers of that ill fated cargo. They might have been later on. After all, steamers left San Francisco bound for the east twice a month, on what were called "steamer days." The amount of gold shipped east from California was enormous. For example, a decade after the *Central America* sank, Secretary of the Treasury H. McCulloch reported to Congress that nearly \$25 million worth of gold bars had been exported from San Francisco in 1866, nearly \$20 million in 1867, and \$18.5 million in 1868 (Rossiter 1869, 251-253). Those bars, all of which were ultimately melted for coining, have been lost to the numismatic world. Who knows what mysteries they might have revealed?

If these western assay bars suddenly appeared out of the blue, with no documentation about them or the firms that made them (and we have seen that there really is), any objective numismatic consideration of their modules, fabrics, punches, styles, finenesses, weights, sizes, and shapes would speak volumes in their favor. For in order for the western bars to be fakes, each one would have had to have been individually made by a trained and skilled chemist from a specially made alloy under controlled circumstances in an analytical lab equipped to test its melts at several steps along the way. Each of the final products would have had to have been poured into a mold specially made for that one purpose and afterwards thrown away. Each of the small bars made in these molds would have had to have been stamped with a set of punches specially made for the purpose, one that was not used on any other bar and was thrown away afterwards. Each would have to bear the name of a firm whose existence and history as an assayer was all but unknown in the early 1950s. Each bar, where appropriate, would then have been stamped with a counterfeited copy of the IRC seal, but only those bars that were to be claimed as post 1864 products. The bars would then have had to have been salted in western locales years before their later "discoveries" in order for the forger to travel around the southwest and notify local newspapers and mining clubs that he was looking for the bars he had already made. Many of the bars so "discovered" would then have to be sent to the Treasury

Department in Washington, in the hopes of obtaining a license to own a gold object at a time when it was illegal for private citizens to own non-numismatic gold.<sup>60</sup>

This scenario is implausible in its complexity, and when the example of real forgeries are studied, like those perpetrated by Becker or Christodoulos or Hoffman, one sees that real fakers actually use rather simple techniques to create their fakes. Their success lies in their victims' willingness, even eagerness, to believe their products are the genuine articles, even when there is evidence they are not. This writer cannot think of another body of collectibles that was so little known when first uncovered and which has been for so long condemned and so closely scrutinized, especially not one that would have required so much elaboration and so many years of planning before its execution. Far from being "the most elaborate fraud in the history of American

<sup>60</sup> The Gold Regulations of July 14, 1954, which amended those of earlier dates, required anyone wishing to own non-numismatic gold to obtain a license from the Department of the Treasury. Persons engaged in the gold trade, such as designers and artists, could own no more than 50 ounces of gold at any one time. Section 54.21-26, U.S. Treasury Department, Office of the Secretary, *Gold Regulations* (Washington, D.C., Government Printing Office, 1954). Section 54.35 of the Treasury Department Gold Regulations, as amended, authorized the issuance of licenses for the ownership of gold bars "having a recognized special value to collectors of numismatic items." The regulations went on to state that "licenses are required...to hold a gold bar which has numismatic value." The regulations stated that no gold bar would be eligible for such a license unless it was of recognized special value to collectors before April 5, 1933 and thereafter. In other words, unless a gold bar was both a numismatic collectable and had been so before 1933, the Department of the Treasury not only would not license it, but such a bar would be subject to confiscation and melting. Many of the gold western assay bars known today were so licensed by this 1954 regulation and thus fall within the Department of the Treasury's definition of bars having special value to collectors. For example, Department of the Treasury License Number ODGSO-TGL-32-1056 covers a \$139.26 Knight & Company gold bar number 1790. License No. ODGSO-TGL-32-1003 is for an 1853 536.2 gns. 999 fine A. Humbert gold bar. The cover letter for the license for the latter states that "The examination has been completed and the bar has been found to be of exceptional numismatic value." The letter is signed by David Howard, Director of the Office of Domestic Gold and Silver Operations and is dated July 8, 1966. License No. ODGSO-TGL-32-1055 is for an 1865 San Francisco Mint \$340.20 ingot, no. 2184.

numismatics," as Buttrey would have it, the description of how these western bars must have been made only points to their true origins, in the bullion assay shops of the old west. These western bars are an unfairly neglected and groundlessly maligned numismatic collectable.

### The Mexican Bars

The Mexican bars are much more difficult to analyze because, as Buttrey correctly notes, there is no documentation about them particularly or colonial Spanish bullion bars in general. We do not have records from the eighteenth century Mexico City Mint as detailed as those from the nineteenth century San Francisco Mint. We do not have easily accessible sources describing the practices of assayers and the marketing of gold in eighteenth century Mexico. We have no newspaper advertisements or recollections from famous novelists that mention particular assayers, as we have for the western bars.

A full examination of the authenticity of the Mexican bars requires much more study than it has received so far. We have already seen Buttrey's arguments against the Mexican bars characterized as "grossly insufficient" by Walter Breen, for example. Authority aside, there is other evidence that makes the issue of the authenticity of the Mexican bars unsettled, despite Buttrey's condemnation. This evidence concerns the nature of the stamp on the bars that has been taken to be the reverse type of the Pillar Dollar, the complexity of colonial Spanish bullion control measures, and the elemental makeup of several of the bars.

The usual description of the more elaborate logotype punches found on the Mexican bars is that they mimic the obverse and reverse types of the Pillar Dollar, which was struck from 1732 to 1771. The explanation offered by those who defend the authenticity of these bars is that these coin type punches were affixed as a sort of "revalidation" process. The story goes that the bars had been made in the 1740s, been lost in a shipwreck, and when recovered in the 1770s were stamped with the Pillar Dollar types to show that the royal *quinto* had been paid on their values. These same devices are explained by Buttrey as direct evidence for the falsity of the bars, since on the type 3 bars the crown on the

left pillar is in the imperial style of 1754-1771 and the legend break H+ISP... is of the style of 1761-71. Thus, Buttrely argues, the type 3 bars must have been made in or after 1761 and cannot have been part of a 1740s dated shipwreck. Also, all the 1744 and 1746 dated type 1 and type 2 bars have the imperial crown type of 1754-71, and so these bars cannot have been found in a wreck of the 1740s, either.

It is equally as possible that the typology of these bars has been misunderstood, and that the elaborate logotype punches seen on these bars are not those of the Pillar Dollar types and so should not be held to the same requirements of chronological and typological standardization that the coin types must. For example, in the Museum of New Mexico, on loan from the collection of Fred Harvey, is a set of silver candlesticks dated by dedicatory inscription 1729 and made for a rich church of Vera Cruz, Mexico, possibly the cathedral, itself. Each of the candlesticks is composed of six separate pieces of silver held together by a single rod inside and down through the center. Each of the six pieces of silver is stamped with three different logotype punches. The first is the letters LIN above CR. The second is two hemispheres of a globe, crowned, between two crowned pillars each of which is draped with a sash. The third is a displayed eagle facing left. The logotype LIN over CR is that of Mexico City Mint assayer Jose Antonio Lince Gonzales (1779-88). The crowned globe is a near twin to the *columnario* type of the reverse of the 8 reales of 1732. The eagle is the tax stamp required on precious metal objects from 1638-1732.

The evidence of these candlesticks, whose authenticity has never been questioned, is confusing. It appears to show the mark of a mint assayer of 1779 some 50 years before his active dates. It appears to show the reverse type of the 8 reales three years before its appearance on the coins of 1732. The only stamp whose active dates coincide with when the candlesticks were made is the eagle, the required tax stamp. The author of *Spanish Colonial Silver*, concludes that "The evidence, however, of these undeniably genuine dated candlesticks proves that the marks 'LIN' over 'CR', a *Mundos y Mares* and an eagle were being used by a silversmith (or shop) in 1729" (Boylan 1974, 30).

If these candlesticks are accepted as genuine, and there is no reason not to, then the *columnario* type predates its first appearance on the coins of 1732. What it signified on the candlesticks is unknown. That

it had something to do with precious metal objects is suggested by its presence on all six pieces that made up the candlesticks. It was probably not meant in this case to signify payment of the *quinto*, the king's fifth, since the displayed eagle mark was appropriate for that purpose and is also found on the candlesticks. However, even if its meaning on these objects is obscure, its presence suggests that the *columnario* stamp on the Mexican bars can be interpreted as something other than a coin die stamp.

The legend **HISP ET ID** which is found on the Mexican bars has been called a nonsense abbreviation for **HISPANIARVM ET INDIARVM**, principally because **ID** seemed to be an incorrect contraction of **IND** without a mark of abbreviation over the **D** (Buttrey 1997, 38). However, Boylan published a crude silver bar cast from a mold inscribed **HIS**(reversed)**P** followed by the outline of a crude shield with four empty quarters and three lobes at the top and the letters **ETID**.<sup>61</sup> This would appear to be another use of the **ID** contraction and another found on a bullion bar.

We have seen a certain lack of standardization in the way western assay bars were stamped. Buttrey argues that this same sort of disorganization can be seen on the Mexican bars, where it clearly marks them as false.

All these marks are irregular, both in conception and application, and it cannot be supposed that they could have conveyed a coherent line of information to anyone....Here we have articles of the greatest value, supposedly created at the government's center established for the purpose, and we find them marked in the most meaningless way. It cannot be too strongly emphasized that regular production, of very valuable objects, at an established institution, requires regular procedures. Standardization of procedures eases production, provides a handsomer and more easily

<sup>61</sup> Boylan 1974, 16, fig. 2. Boylan also mentions "Bars of bullion, however, bearing the royal insignia of Spain, 'R HS ET ID'...with a crude shield and quarterings in the middle, have been found in the state." The author clearly does not understand the significance of the inscription, but she does go on to mention that "these ingots are being copied now," showing she is aware of the fake Arizona silver ingots that Buttrey also mentioned in his paper on the Tubac ingot.

understood object, and simplifies record keeping. If anyone knew this in the 18th century, it was the administrators of the oldest mint in the Americas." (Buttrey 1997, 35).

When one reads the royal decrees governing how a mint was to be operated and how taxes were to be collected, one sees the orderly way the central government wanted things to be, exactly as Buttrey expects them to be. There has always been a dichotomy between the way things are meant to be and the way they are actually run. The farther from the seat of royal government, the more relaxed the rules often become.

To illustrate, the chief assayer at the Mexico City Mint from 1733 to 1788 was Diego Gonzales de la Cueva. His successor, Jose Antonio Lince Gonzales, later wrote of his predecessor that "at this time there was apparently much fraud, and some confusion in regard to the stamp pertaining to the payment of the Royal Fifth" (Boylan 1974, 50). Lince Gonzales, a lawyer, drew up his *Ordenanzas de Ensayadores* in 1783 to try to bring some order into the irregularities that had had been rife in the Mexico City Mint's assaying department during his predecessor's term. A recent study of the silver marked during Lince Gonzales' term of office concludes that Gonzales "could not clear up the confusion in the use of the eagle mark and the crown mark for the standard of purity and payment of the Royal taxes" (Ahlborn 1969, 38-39). Ahlborn goes on to say that "The fact that virtually no domestic plate made in colonial Mexico bears its full complement of marks suggests the problems inherent...in our study [of Mexican control marks]...many patrons considered the marks disfiguring, or chose to have their service bear their own family names. In addition, there were prohibitions against silver objects crossing the Atlantic, in either direction. While special concessions were given to the jewelry of aristocratic ladies, and to some pieces commissioned by the Church and by the King, retired officials virtually had to smuggle their plate back into Spain" (Ahlborn 1969, 38-39).

Not only was there disorganization in the type and presence of control marks found on Mexican silver objects that were, by law, all supposed to bear a standardized set of marks, there was also disarray in the supply side of the Spanish colonial silver industry. Enrique Tandeter has shown this in *Coercion & Market: Silver Mining in Colo-*



*nial Potosi, 1692-1826*. Speaking of the labor levies at the Potosi mines, he writes "As the words of Villava [Victoriano de Villava, fiscal of the high court of Charcas] suggest, reality was at an enormous distance from the legislation, and more than two hundred years of practice had consolidated a labor process whose reform was practically impossible" Tandeter 1993, 38).

A lack of order implying a lack of strict oversight may also be seen in the way other Spanish colonial gold and silver bars, different from the Mexican gold bars, were also stamped. For example, three gold bars said to have been discovered in a sixteenth century Spanish wreck are stamped with partial impressions from a round die the size and diameter of a crown-sized coin. This die stamp is composed of a beaded outer border surrounding a legend composed of letters some of which read PPVS:D:G. These stamps are unexplained and quite unusual, yet are certainly genuine.<sup>62</sup> A cast silver ingot (silver 83.4%, gold 0.6%, copper 16%) found at a wreck site off the Bahamas bears in individual punches the enigmatic letters R, C, BV, IVC, X, and X in the upper right corner of one side.<sup>63</sup> A heavy 65.41 ounce gold bar is marked four times with a circular stamp showing a castle between two stars, which is said to be Charles V's mark (Spink's Singapore, 25 June 1994, 374, where the cataloguer noted that there were none of the required and expected tax stamps were to be seen on the bar).

Finally, and even more suggestive of the differences between local practice and royal decree, there is the River Plate treasure, dispersed by Sotheby's on March 24-25, 1993. There were 50 Lima Mint 1750 cob 4 Escudos coins in the treasure group, on which were noted seven obverse and three reverse dies. Four of the obverses were actually 8 escudos dies, and some of the coins in the group showed parts of the denominational "8" atop the Jerusalem cross. There were approximately 10 of these coins, or 20% of the total. One of the obverses was a 2 escudos die and the coin it struck showed a full "2" on the cross side but a "4" on the reverse, making a double denomination error. Lima was no less an organized mint than Mexico City, and one must

<sup>62</sup> Sotheby's, 16 Dec. 1997, 133-35.

<sup>63</sup> Newark Museum, accession no. 93.118.1.

wonder how such a large number (and proportion) of errors could have escaped the mint's oversight.

The lack of a detectable weight system for the Mexican bars and the enigmatic markings on some of them are all evidence of something other than a standardized product of a properly functioning mint. The story that the Mexican bars were shipwrecked gold made at the Mexico City Mint is an obvious legend meant to enhance the marketability of the bars. The presence of the Mexico City mintmark, in the form of scores of punches many of which are different one from the other, suggests that, if these bars are real, they passed through the Mexico City Mint at some time in their histories. It is very unlikely that they were actually made there in the first place, however, and in this Buttrey is right, one would expect some more regularity in their weight, shape, and fabric were they official products. That they might not have been officially produced is a possibility that has not been mentioned before. Assuming they are real, could they have been made privately, stamped at the Mint on payment of the required tax, and shipped aboard a vessel bound for Spain? The possibility is intriguing.

Finally, there is the evidence from the various metallic analyses that have been carried out on some of the Mexican bars. This shows them to be made of an alloy entirely unlike anything that could have been obtained by melting a quantity of modern gold coins available to a forger in the 1950s. Instead, it suggests that the only possible sources for the gold in the bars were either Spanish colonial gold bullion or melted colonial Spanish gold coins from the Mexico City Mint which were then refined and assayed to adjust the elemental composition, a money losing operation since the coins were worth more sold to collectors than the bars would be. In other words, the metallic analyses suggest that the Mexican bars are either false made from an adjusted melt of genuine coins, or they are real.

This has not always been appreciated by the critics of the Mexican bars. For example, the analyses of a bar run on behalf of E. G. V. Newman in 1990 yielded the following readings: gold 91.2%, silver 6.8%, and copper 1.8%, along with traces of cadmium, iron, nickel and tin (Newman 1990). The bar was later tested by what was described as spectrographic analysis, yielding various traces including iron and tin. The iron content was interpreted to read 100 ppm or

0.01%, the tin 300 ppm, or 0.03%. By summing the gold, silver, and copper readings found in the Goldsmith's Hall analysis, Newman arrived at a purity of 99.9556%, which he wrote was "metal of a purity unobtainable in the 18th century in Mexico, where the patio process was used to recover silver and gold...." Newman found the small amount of tin in the alloy, only 0.03%, to be "surprising" and led him to speculate that the tin came from the admixture of a low tin bronze to the alloy by the counterfeiter who had made the bar. Newman did not remark on the significant presence of 6.8% silver in the Goldsmith's Hall analysis. That led me to review the analysis, along with other published analyses of Mexican bars, as well as of several genuine Mexico City Mint gold coins (Hodder 1990).

Reporting on x-ray spectrographic tests done at the Museum of Fine Arts, Boston in 1975 on two Mexican bars and three genuine Mexican gold 8 escudos coins dated 1743, 1744, 1745, I suggested summing the gold, silver, and copper contents of the three genuine gold coins, so that the purity readings were 99.95%, 100%, and 100%, respectively.<sup>64</sup> Since no detection limits or margins of error were recorded for the 1975 analytical techniques, no clear limits of precision could be applied to these results. However, if the results were even 5% too high, they still would yield readings of 94.95%, 96%, and 96% for the coins. The bars yielded readings of 99.95 and 100%, also, and applying the same (arbitrary) 5% margin of precision, would leave readings of 95.95% and 96% purity. We can conclude that the patio process that refined the gold that went into the genuine coins was quite capable of obtaining such purities on a regular basis. Newman's conclusion that the Mexican bar he examined could not have been made from gold refined by the patio process was, therefore, incorrect, and his analyses were significant of nothing but the elemental makeup of the bar in question.<sup>65</sup>

<sup>64</sup> July 29, 1975 letter from W. J. Young of the research laboratory of the Boston Museum of Fine Arts addressed to Harvey Stack of Stack's, New York.

<sup>65</sup> Buttrey 1997 acknowledged my conclusion about the purity of the Mexican bars and the coins being essentially identical. The comments about trace elements, which Buttrey made the center of his dismissal of my challenge to Newman's conclusion, actually have nothing material to do with the fact that the bars and the coins are of very high purity.

Three other Mexican bars, one of each of Buttrey's three types, were analyzed by PIXE in May, 1998 and yielded the following readings.

Table 5  
PIXE Analyses of Three Mexican Bars

Buttrey Type	Gold%	Silver%	Iron%	Copper%	Nickel
Type 1	91.1	8.7	0.10	0.017	0.0
Type 2	95.1	4.6	0.17	0.018	0.038
Type 3	90.2	8.8	0.75	0.04	0.04

These readings are in line with those reported by Newman and myself in 1990. The purity of the gold in these bars is 90% and higher, while the silver content ranges from a low average of 4.6% to a high of 8.8%. There are significant traces of iron in all the bars tested, and it is quite possible that the presence of iron may be a fingerprint to the ore source. The readings for copper show that the alloy used to make these bars was not some simple melt of modern European gold coins.

The 1975 analyses of the genuine Mexican gold coins showed that there was nothing in the purity of the Mexican bars that could not be accounted for by the patio process of refining gold and silver. The 1998 analyses of Mexican bars show that they are composed of a very high purity gold-silver metal. The silver contents of the genuine gold coins from the Mexico City Mint were 10.45%, 7.3%, and 8.4%, and it is interesting to note that the Mexican bars tested yielded similarly high silver content readings. Copper contents in the Mexican gold coins were 1.5%, 1.5%, and 2.1%, in each case higher than the copper found in the Mexican bars. There were, unfortunately, no useful measurements of the iron and nickel contents in the 1975 analyses.

Every Mexican bar tested thus far has yielded similar readings of high gold and silver, low copper content. The gold to silver ratio in the bars is similar to that seen in the genuine gold coins. The copper contents differ.

If the Mexican bars were made in the early 1950s, they were products of the technology and metallurgy of their time. One must ask oneself the obvious question, if the bars were made in the 1950s,

what were they made from? Where did the forger get his metals? How did he circumvent the laws against private citizens owning gold that were in effect at that time? Why did he decide to mix silver with his gold in just the proportion that it is found in genuine Mexico City Mint gold coins? Why did he decide to mix so little copper with his gold, instead of the amount found in the genuine gold coins? Why did he make so many different letter, numeral, Mo, and *columnario* punches, scores of them, instead of using just a few? Why did he use a coin type punch that looked anachronistic instead of one that would have fit the time frame of the story he made up about the bars? How could a man so knowledgeable about Mexican gold coins and so devious as to prepare a great master plan forgery that took years to unfold, make an elementary mistake more typical of a novice collector? Why did he decide to make so many different molds for the bars? What was his motive for making fake bars, when they sold for only about twice their melt value when they first hit the market? If the bars are assumed to be false, and given the costs necessarily involved in making them, a selling price of twice their melt value per ounce must obviously have represented a significant loss of money on each bar. As a commercial venture this would have been ridiculous. What could the motive have been for making these bars? Was it all for gratifying the faker's ego?

These questions have to be answered before the authenticity of the Mexican bars can be successfully challenged. They have not been, yet. There is evidence in favor of the Mexican bars that has not been adequately explained by their detractors. The question of the western bars should now be settled in their favor. The Mexican bars remain in a sort of numismatic limbo, awaiting the attention of serious study.

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## BOOK REVIEWS

Christopher Howgego, *Ancient History from Coins. Approaching the Ancient World*. London and New York: Routledge, 1995. xvi, 170 pp, 23 pls., 3 figs. ISBN 0-415-08992-1; paper 0-415-08993-X, \$16.95.

François Rebuffat, *La Monnaie dans L'Antiquité*. Paris: Picard, 1996. 271 pp., 137 illus., 14 maps. ISBN 2-7084-0455-5; paper 2-7084-0495-4, FF 300.

Recent studies of ancient coins are moving ever further away from the tradition of Barclay Head's *Historia Numorum* (2<sup>nd</sup> ed., London, 1911). Head, of course, divided ancient numismatics into rough chronological periods and sought to cover the entire corpus of ancient Greek coins in a basically west to east geographical progression that included as many known varieties struck at individual mints as possible. This format, even when changed to a more geographically generalized but chronologically precise ordering (e.g. C. M. Kraay, *Archaic and Classical Greek Coinage* [London, 1976] or O. Mørkholm, *Early Hellenistic Coinage from the Accession of Alexander to the Peace of Apamea* [Cambridge, 1991]), nevertheless still focused on the most artistically and historically noteworthy varieties of issues, particularly in gold and large denomination silver. There is, however, a growing interest in the presentation of ancient Greek and Roman coinages in considerably broader contexts, and the following reviews are offered as brief reports on two recently published examples in what might be characterized as ancient monies viewed through modern perspectives.

Chris Howgego's *Ancient History from Coins* is the fourth publication in Routledge's very useful series, *Approaching the Ancient World*. *AHC*'s basic theme is provocatively stated on the back cover of the paperback edition, "What can coins tell us about the ancient world?" In six chapters, with virtually no footnotes, Howgego offers both answers and further questions to be considered. In chapter 1 he asks

“What difference did having a coinage make?” in 2 “Why were coins struck?” in 3 “What was the relationship between coinage and empires?” in 4 “How did politics influence the selection and iconography of coin types?” in 5 “What can the coins tell us about broad economic issues of ancient trade and commerce?” and in 6 “How do Greek and Roman coinages reflect financial and political pressures or crises?” All are important questions central to the understanding and use of ancient Greek and Roman coinages as evidence for reconstructing and understanding the economic, financial, and political structures of the ancient world.

To illustrate the discussions, Howgego uses 156 coins from the Heberden Coin Room of Oxford’s Ashmolean Museum which are supplemented by 26 examples from the British Museum and 2 silver ingots from other collections. The illustrations are all produced from the original coins on a 1 to 1 scale and are adequate to the purposes of the book, though a bit too dark to permit really close inspection. Furthermore, given *AHC*’s aim of introducing the reader to the contribution of numismatics in the understanding of ancient history, it is disappointing to this reader that the book has only three figures (one map and two graphs). Particularly in discussions of the role played by coinage in ancient empires (e.g. the Persian empire, the Athenian confederacy of the fifth century B.C., the kingdoms of Philip II, Alexander, the Seleucids, Ptolemies, and Attalids, and finally the Roman Republic and empire) much could have been gained from providing maps of minting activity and graphs of critical features such as production or circulation in relevant historical contexts. Since the purpose of *AHC* is to address “historical questions which arise out of the existence and nature of coins and [to demystify] this specialized subject and [introduce] students to the techniques, methods, problems and advantages of using coins in the study of ancient history” (back cover), Howgego could have greatly sharpened both the clarity and coherence of his discussions by including more explanatory figures.

In the discussions themselves, Howgego’s selection and handling of the material covered reflects deep knowledge of the subject and sensitivity to the ever-present need for careful balance between the trained numismatist’s specialized interests and the non-specialist’s limited tolerance for jargon-laced treatment of unfamiliar material. A good

example of this occurs immediately in Howgego's treatment of the origin and meaning of coinage (chapter 1, pp. 1-23).

Due to a combination of the inadequacy of verifiable information and the debatable reliability of ancient traditions, placing the introduction of coined money in a meaningful historical context is next to impossible. We simply do not yet have the necessary evidence to assign confidently an absolute date, a responsible authority, a precise economic rationale, or a specific political motivation for the origin of coinage. Debate among specialists has been long, intense, and complex, and yet Howgego artfully balances his treatment with a clear presentation of the limits of the existing evidence and a strong (almost too strong) resistance to taking sides on any of the ongoing technical controversies.

On the question of when coinage was introduced, for example, Howgego emphasizes the paucity of archaeological evidence and concludes that, on the basis of Anton Bammer's recent reexamination of Hogarth's early twentieth century excavations of the archaic foundations of the Temple of Artemis at Ephesus (Bammer, *AS* 40 [1990], pp. 137-60, and *RA* 1991, pp. 63-84, to which Howgego might have added Bammer, *JÖAI* 58 [1988], pp. 1-23): "We can only say that the earliest context for electrum coinage is underneath the temple of c. 560 BC to which the Lydian king Croesus contributed" (p. 2). This conclusion reveals immediately Howgego's surprisingly strong resistance to the obvious, but perhaps unwanted, conclusion that comes from recent reexamination of a very mundane piece of archaeological evidence—a small, unglazed pot that once contained a hoard of some 19 early electrum coins buried in the rammed earth separating Hogarth's "A" and "B" building periods *beneath* the ca. 560 B.C. Croesid Temple of Artemis. The pot still exists in the British Museum and has been located and studied by Dyfri Williams (*BICS* 38 [1991-93], pp. 98-104), as Howgego duly notes (p. 2). In dating the pot, Williams points to the comparative evidence of stratified ceramic deposits on the nearby island of Samos and at Miletus, both of which place the production of the Ephesian pot securely in the third quarter of the seventh century B.C.

For Howgego to reject without explanation the reliability of this entirely objective evidence for establishing at least a terminus ante

quem for the earliest electrum issues, raises fundamental questions about the allegedly "scientific" approach of the book. After all, it's one thing for Howgego to doubt the reliability of numismatic dating based on the controversial comparison of stylistic features appearing in different types of art. It is, however, a very different matter for Howgego to dismiss secure and independently verifiable archaeological evidence as if it were nothing more than subjective opinion. A reflective reader may legitimately ask: if Howgego himself is unwilling to accept the interdisciplinary contributions of other fields of research to outstanding questions in numismatics, why should the reader accept the reverse and trust Howgego's claims about the decisively illuminating contribution of numismatic evidence for answering difficult political, historical, or social questions about the ancient Mediterranean world? The danger is that such all-encompassing skepticism can lead to an unfortunate situation where all information comes to be viewed as equally unreliable and thus insufficient even to determine the limits of reasonable and reliable reconstruction of the past. And since this is obviously not Howgego's intention, it is somewhat surprising, and troubling, for the book to begin with such a controversial message.

In the opposite way, in his sixth and final chapter, Howgego examines how surviving numismatic evidence reflects specific and sometimes otherwise undocumented crises in ancient state finances. Two initial examples are given, Athens at the end of the Peloponnesian War and Rome during the Hannibalic War. In 407/6 the Athenians minted an emergency issue of gold in response to military defeats and being cut off from access to supplies of silver that were normally used to meet Athens' needs for coinage. Surviving specimens, together with contemporary historical and epigraphical evidence, confirm that this extraordinary step was actually taken during the financial crisis at the end of the Peloponnesian War. Howgego agrees with a further reconstruction that assigns silver plated copper tetradrachm issues to the desperate years between the emergency gold issue and the final siege and surrender of Athens (p. 111). The issue truly represents an extraordinary intersection between financial, numismatic, artistic, and historical evidence.

The Romans also faced severe financial pressures during the Hannibalic War. Like Athens, they resorted to minting gold; but unlike

Athens, the Romans also extended their silver coinage by debasing it from ca. 97 percent fine to ca. 89 percent and extended their bronze coinage by reducing the weight of the coin from ten Roman ounces to a mere two ounces. As at Athens the coins themselves thus reflect and illuminate the desperate historical events and economic forces that accompanied the Second Punic War. For Howgego, these two fairly well documented examples provide the foundation for understanding several extraordinary issues or unusual manipulations of normal issues in the Roman Empire for which the poorly preserved historical record offers little or nothing to explain the deviation from normal minting patterns (pp. 113-15).

In the remainder of *AHC*, Howgego offers a general discussion of the evidentiary importance of coinage in Roman history (pp. 115-40). Noteworthy is his conclusion that the Romans primarily used debasement of the silver coinage as a practical expedient that "helped to balance income and expenditure." Thus, in a financial strategy that parallels the modern practice of constantly expanding the monetary supply to meet "required" payments, the Roman government, particularly during the Empire, used debasement of the silver coinage as a flexible instrument to support deficit spending. Two figures on pp. 116-17 illustrate how this strategy gradually became out of control during the third century A.D. But what is harder to determine is the extent to which debasement of the Roman coinage was a cause of or reaction to inflationary rises in prices that accompanied expanded production of new coinage. After considering the evidence for both possibilities, Howgego cautiously concludes that "prices tended to follow metal content of the coins in the long run, but not in any immediate or accurate way, and with a degree of local variation" (p. 130).

In his *La Monnaie dans l'Antiquité*, François Rebuffat applies an approach to the study of ancient coinages and money distinctly different from Howgego. While Howgego focuses on places where ancient Greek and Roman coins themselves provide significant evidence for reconstructing specific historical accounts, Rebuffat offers a far more general socio-economic account of how ancient coinages and non-numismatic monetary systems reflect the cultures which produced them. In nine chapters stretching from the prehistoric underpinnings of the Greek and Roman monetary systems to the societal and cultural

impact of coinage-based economics on the ancient polities which adopted them, Rebuffat presents a heavily footnoted account of the role numismatics plays in the reconstruction of any comprehensive history of the ancient Mediterranean world and its Near Eastern neighbors. Many ancient sources are quoted and discussed in support of the conclusion that economic issues, reflected in ancient coinages, were crucial in the distinctive evolution of cultural self-identity for both the Greek city-states and Rome (pp. 231-234).

Rebuffat's narrative is supported by 137 illustrations on 31 plates beginning with Hammurabi's law code (dated 1760 B.C.) from the Louvre and ending with a Han dynasty bronze coin (dated 140-87 B.C.) from the collection of the Cabinet de Médailles in the Bibliothèque Nationale. The Cabinet de Médailles is the source of virtually all numismatic images; and many of the illustrations are enlarged, generally two-to-one but occasionally three-to-one. On balance, use of oversized images permits careful study and thorough appreciation of the exquisite details incorporated into many of the types—particularly of the Greek and Roman coins. In addition, the narrative is enhanced by inclusion of a number of useful tables such as Pheidonian weights by denomination and modern metric equivalents (p. 32); Athenian weights by denomination and modern metric equivalents (p. 40); second century A.D. emissions by emperor from cities in Roman Pisidia (p. 115); Greek (p. 129) and Roman (p. 130) systems of numeral notation; the evolution of third century A.D. bronze coins of Syedra in Cilicia between Valerian and Gallienus (p. 130); preferred coin types in provincial Asia Minor (p. 170); Roman Republican bronze types and denominations (p. 171); Greek nomenclature for Roman magisterial titles (p. 194); and reformed base metal denominations and weights under Augustus (p. 218). At the end (pp. 235-46) there are also 14 maps of minting sites in the ancient Mediterranean world followed by a 10 page bibliography (pp. 247-56) and 7 indices (pp. 257-66, i.e. geography, individuals, gods-heroes-myth-allegory, peoples, ancient authors, modern authors, numismatic terms).

All of these features are appealing and useful given the broad scope of *MdA*. It is therefore disappointing to discover that both the bibliography and the indices seem to be incomplete and in need of more work. For example, Rebuffat's bibliography includes roughly 345

entries of which 176 or 51 percent are studies written in French. This is no surprise, since the *Antiquité/Synthèses* series is aimed at an educated but non-specialist audience and includes other broadly introductory texts such as *Histoire sociale de Rome* and *L'armée romaine sous le Haut-Empire*. In comparison, Howgego's bibliography (pp. 143-161) contains some 387 titles of which 296 or 76.5 percent are in English. This preference no doubt likewise reflects the intended readership of the *Approaching the Ancient World* series; and, on the whole, Rebuffat's and Howgego's bibliographies complement and supplement one another rather nicely. Rebuffat, for instance, lists eleven studies by the late French epigrapher Louis Robert (p. 254), while Howgego has only two (p. 158); and oppositely, Howgego includes fifteen studies by former British Museum curator of Greek coins, M. J. Price (pp. 156-57), while Rebuffat lists just five (p. 253). The interesting thing in this is that, collectively, the two bibliographies provide a very good cross section of economic and numismatic studies that contains fewer repetitions than one might imagine and has only the outstanding weakness that neither bibliography includes more than scant coverage of studies published in German (e.g. Christof Boehringer's important *Zur Chronologie mittelhellenistischer Münzserien 220-160 v. Chr., Antike Münzen und Geschnittene Steine 5* [Berlin, 1972] appears in neither).

A further shortcoming of Rebuffat's bibliography is the poor proofreading. In particular, there are numerous misspellings and other small errors that suggest hasty or disinterested attention to details. Rebuffat's listing of his own article, "Le trésor d'Ayvagedigi," has "tësor" (p. 254)! There are numerous similar mistakes. These proofing errors go along with numerous mistakes in capitalization, particularly in English titles, and other problems, such as the omitted publication date for Zehnacker, *Numismatique de la République*.

Once the reader begins to recognize that insufficient time and effort has been devoted to the detailed work of proofreading the bibliography, it takes no time to see similar shortcomings in other places like the indices (pp. 257-66). Here, the organization of categories is very useful; but the entries included (and excluded) are frankly a mystery. Under "Index des termes numismatiques," for example, there is no listing for "contremarque," even though there are numerous discussions involving countermarks (e.g. pp. 119-22, 130, 220, 265) and an entire section,



“Les contremarques” (pp. 119-22), in the chapter titled “L’exercice du droit de battre monnaie et ses conséquences” (pp. 99-143).

In addition to these problems, *MdA* has turned the otherwise commendable inclusion of ancient Greek quotes into a disturbing distraction by misspelling and failure to place the breathing and accent marks in the correct places. One outstanding example is p. 14, n. 17, where νομός appears for νόμος, thereby changing the meaning from “law, usage, custom” to “pasture.” Larger issues also lurk in the substantive pronouncements of *MdA*. In the first chapter “Aux origines de la monnaie: Le monde prémonétaire et les premiers échanges” (pp. 11-21), Rebuffat states that the Linear B tablets of Mycenaean society date to “la fin du XVe siècle” and refers the reader to J. Chadwick’s *The Decipherment of Linear B* (no specific pages are given in Rebuffat, p. 11, n. 1; but the reference must be to Chadwick, pp. 14-15). What is wrong here is that virtually no leading scholar of the Aegean Bronze Age still believes that the existing Linear B tablets date to the fifteenth century B.C. For some time it has been recognized that the correct date lies in the thirteenth century (see e.g. O. Dickinson, *The Aegean Bronze Age* [Cambridge, 1994], pp. 21-22 and, more recently, J. Rutter’s bronze age lesson 25 on the World Wide Web at <http://devlab.dartmouth.edu/history/>). To make matters worse, Rebuffat also wrongly names Michael Ventris as Michael Vendrys and thus further suggests basic unfamiliarity with the material he is presenting.

In the section that immediately follows, the Mycenaean mistakes are compounded by the erroneous statement that the Hittite archives at Hattusha (Boghaz Köy) date to the “XIXe siècle” (p. 11-12). The fourteenth to twelfth centuries B.C. is actually the date assigned by experts in the field (see e.g. J. G. Macqueen, *The Hittites and Their Contemporaries in Asia Minor* [London, 1996], pp. 22-35).

While these errors are bothersome and definitely diminish the overall success of the book, it is nevertheless the case that Rebuffat covers an extraordinarily wide range of issues where numismatic evidence is the focus or plays an important part. The inclusion of money from ancient cultures aside from Greece and Rome (pp. 224-30) also fosters comparative insight about the impact of a coinage economy on the societies adopting it and serves to enrich the discussion of Greek and Roman developments. And while the discussions of the coinages of individual

states may appear to be too general for expert readers, there really is a great deal of information packed into the book. For more detailed information the serious student will, of course, need to refer to specialized studies; but Rebuffat incorporates many helpful references in his footnotes and main text. Throughout the book, he also seems to maintain a greater interest in the ancient sources than Howgego does. Where Howgego seems to be somewhat uncomfortable dealing with traditional accounts of numismatic origins (e. g. "there is little reason [apart from later literary references] to push the start of silver coinages back much before the middle of the sixth century" [*AHC*, p. 6]), Rebuffat seems everywhere ready to ignore the prevailing chorus of skeptics crying out against the ancient sources and to give significant coverage to ancient traditions (e. g. *MdA*, p. 28-40). Thus, while *MdA* may offer no striking new insights or evidence about ancient numismatics, it does nicely lay out a wide range of views and incorporates into numerous discussions ancient testimonia as well as modern commentary.

Perhaps then, in the end, Howgego and Rebuffat offer more than new perspectives on ancient coinages. Perhaps they are also offering different perspectives. In his work, Howgego insists on "scientific" evidence as the foundation and starting point of reconstructing the historical context of numismatic activity. He has little patience with the "opinions" of the ancients and finds greater satisfaction in using the numismatic evidence itself to reconstruct otherwise unrecorded historical and economic trends and events. For Rebuffat, on the other hand, it is the people who matter most. For him, the numismatic evidence serves as a kind of mirror that reflects the distinctive features of the social unit responsible for its creation. Hence the ancient sources, whether they intend to reveal economic and social secrets or not, have great importance to Rebuffat's understanding of the past and must be taken into consideration to achieve any meaningful reconstruction. Together, then, these two books offer both skillful advocacy for their own methods of approaching numismatic study and communicate a powerful sense of the appropriateness and benefits to be gained from that study.

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Andrew S. Hobley, *An Examination of Roman Bronze Coin Distribution in the Western Empire A.D. 81-192*. BAR International Series 688. Oxford: Archaeopress, 1998. xii, 425 pp. ISBN 0-86054-874-0. £50.00.

The circulation of Roman imperial coins has drawn increasing attention in recent years, both from numismatists and historians. The most detailed and sophisticated treatment of coin circulation to date is Duncan-Jones' *Money and Government in the Roman Empire* (Cambridge, 1994), a survey of the empire's monetary economy based on a collection of 230 gold and silver hoards. The 1996 publications of Harl's *Coinage in the Roman Economy* and the proceedings from a symposium held at Oxford in 1993, *Coin Finds and Coin Use in the Roman World* (C. King and D. Wigg, eds.), indicate continuing interest in the topic. The book under review comes at a propitious time.

Hobley's study, an unrevised Ph.D. thesis written under the supervision of Richard Reece, differs from most previous work on the subject in two ways. First, the focus is on the imperial bronze coinage, often overlooked in discussions of imperial coin circulation. Second, in assembling a large sample of bronze coins the author has eschewed the use of hoards in favor of the evidence from published excavations and the holdings of local museum collections. Much of the data collection required personal examination—4,000 coins in Milan were identified in 12 days (p. 2)—and the whole process consumed 11 years (p. xi). The result of Hobley's labors is a tome for specialists only. With 297 tables, 161 figures (mostly graphs), and just 52 of the 425 pages reserved for text, the book confronts the reader with an overwhelming amount of raw data.

The first chapter (pp. 1-5) defines the parameters of the study and explains the methods of data collection. To meet the stated objective of establishing "the pattern of bronze coin circulation in Western provinces of the Roman Empire" for the period A.D. 81-192 (p. 1), Hobley has drawn on a range of sources to create a sample of bronze coins from Britain, Belgium and Lower Germany (excavations), Upper Germany, Raetia and Pannonia (*Fundmünzen der Antike* series), and Gaul and Italy (museum collections). The total number of coins in the study is first given as 24,822 and then as 24,622 (both p. 2), but the

correct figure, as calculated from the data in tables 1.1 to 1.10 (which list the number of coins by denomination and by reign for the different regions), is 25,783. No explanation is given for these discrepancies.

Chapters 2-4 (pp. 6-21) investigate three aspects of the bronze coinage for the entire period 81-192: volume of production (chapter 2), fluctuations in the ratio of bronze denominations (3), and supply to the provinces (4). In each of these short chapters Hobley lays out the basic data in tabular and graphic form and offers a straightforward conclusion. By dividing the number of coins in the sample for each emperor by the number of days in each emperor's reign, Hobley concludes in chapter 2 that the highest rate of production was reached under Nerva (p. 6). In chapter 3, a reign-by-reign survey of the variable ratio of bronze denominations reveals the rise of the sestertius and the decline of the as as the principal bronze denomination (p. 12). The main conclusion of the fourth chapter is that supply to the military provinces (Britain, the two Germanies, Raetia, Pannonia) decreased while supply to the civilian provinces (Gaul, Belgica, Italy) increased (p. 18).

Sensitive to potential criticisms of these conclusions, Hobley is willing to subject his initial findings to more detailed analysis. In examining the high rate of production under Nerva, for example, he measures the volume of production for each emperor's accession year to test whether the brevity of Nerva's reign might account for the relatively high number of Nerva's coins in the sample and finds that production under Nerva still surpasses that of other emperors (p. 7). Interpreting the results is a different matter, and here the reader encounters a tendency met throughout to ascribe patterns in the data not to the nature of the evidence and the modern recovery of it, but to imperial decision making. So according to Hobley the increased production under Nerva "is intended to flood Fora, Principia and Macella with the themes of the-new-reign" (p. 8), and the rise of the sestertius is the result of Trajan's "stringent regulation" of the relative volume of silver and bronze (p. 13, cf. p. 19).

Volume of production, ratio of denominations, and supply to the provinces are then considered on a reign-by-reign basis (Domitian to Commodus) in chapters 5-11 (pp. 22-104), with special emphasis on provincial distribution by year and by *RIC* type. In each of these

chapters Hobley again presents the data in tabular and graphic form, but there are no broad conclusions as in chapters 2-4, and the text mainly summarizes the data. There are, however, a number of individual observations which will be of interest to specialists. The following selection may be taken as representative of Hobley's findings.

- The uneven distribution of Nerva's coins between Upper and Lower Germany implies a lack of movement between bordering provinces (p. 32).

- A high percentage in most provinces of die-linked material from Trajan's COS V bronze (A.D. 103-111) suggests that this coinage was produced over a short time-span (p. 42).

- The evidence from 119-22 implies that an imperial visit did not necessarily bring about an infusion of coins to the area visited (p. 52).

- The distribution of Hadrian's province types shows that there is no concentration of the type for a province in that province (p. 53).

- Comparison of the annual distribution of the coins of Marcus Aurelius before and after each year's imperial salutation suggests that most provinces were supplied more than once per year (p. 85).

- Some areas in the survey have more coins of Crispina than of Commodus (p. 98).

As in chapters 2-4, Hobley often adduces conscious decision-making to explain the results of his data. Peaks in supply to Belgica and the two Germanies in A.D. 82, for example, "may represent the initial coin production of [Domitian's] reign being focused on the main armies" (p. 22), and it is suggested on the basis of the high number of coins for Diva Faustina I that "her death must have affected Pius deeply" (p. 68).

Most of Hobley's explanations are, at best, plausible, but too many imply an active role for the emperor in the regulation of mint output, and nearly all rest on the assumption, not made explicit until chapter 18, that the state formally undertook to supply the western provinces with a bronze currency by transporting newly minted bronze coins to these provinces and selling them to moneychangers (p. 139). That scenario *may* be correct, but is not necessarily so, and to refer casually to the "supply" and "distribution" of bronze coins is therefore potentially misleading.

Chapters 12-16 (pp. 105-27) explore the nature of the evidence used to construct the sample. In chapter 12, on coin hoards, Hobley cites the slightly irregular composition of just one hoard (Biassano) to “prove” the dubious assertion that coins in hoards were selected on the basis of their types (p. 106). Chapters 13-16 compare different sets of material—the shrines at Bath and Coventina’s Well (chapter 13), British sites in general (14), continental sites in general (15), and material from museums in Gaul and Italy (16). The use of material from museums in Gaul and Italy (ca. 50 percent of the sample) instead of hoards seems counter-intuitive, since hoards assembled in antiquity are *a priori* more likely than collections formed in the modern period to be representative of ancient coin circulation, and indeed at various points in the study Hobley addresses the possibility that the museum material has skewed his results (cf. pp. 6 and 40).

A summary chapter entitled “Conclusions” (17) is followed by a discussion of the coinage circulation system in the West (18) and a list of references for the sites and collections examined (19). After a brief bibliography (pp. 145-46), Hobley presents the full catalogue of every coin in the study. There are 276 pages of tables and graphs listing the coins in each area by site, by date, and by *RIC* number (pp. 147-422). There are no directions to guide the reader through this lengthy and sometimes bewildering section of the book.

The clutter of the full catalogue brings us to the issue of presentation. The fundamental flaw in this respect is the sheer quantity of tables, charts, graphs and figures—there is simply too much data unnecessarily repeated in different formats. There are other problems. I noted in passing several incorrect internal references, barely comprehensible graphs (fig. 4.9, p. 21), incomplete tables (p. 43) and miscalculations (especially in tables 1.10 to 1.11, pp. 3-4). The book is also riddled with misspelled words, mainly ancient names and places, e.g. “Saturnius” for Saturninus (pp. 22 and 25), “Bythinia” (p. 25), “Mauritania” (p. 65), “Vindobonna” (p. 83), “Marcomanic” (p. 84) and “Satius” for Statius (p. 138). A single page (33) contains “Alimentia,” “Provedentia,” “Renescens,” “Fisci Iudici,” and “Fisci Iudea.” Even the names of eminent numismatists are susceptible to misspelling—“Kray” (p. 1), “Ettiennie” (p. 54), “Amandery” (p. 143), “Grieson” (p. 145),

"Mattlingly" (p. 146). It is unclear whether the author or the publisher is to blame for the sloppiness of the final product.

Hobley's study, then, has a number of shortcomings. What one really notices when working through it is the author's failure (or unwillingness) to subordinate all of this data to some larger argument about the monetary economy of the Roman empire. And this is particularly unfortunate since, as I hope this review has indicated, the book contains a number of potentially important findings which deserve to be incorporated into the mainstream discussion of the Roman imperial economy.

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Jean-Baptiste Giard, *Catalogue des monnaies de l'Empire romain III. Du soulèvement de 68 après J.-C. à Nerva*. Paris/Strasbourg: Bibliothèque nationale de France/Poinsignon Numismatique, 1998. Pp. cxxxii, 366 pp., 16 pls. ISBN 2-7177-2041-3. FF 490.

This third volume of the Bibliothèque Nationale's catalogue of Roman imperial coins concentrates on the years 68-98, from the fall of Nero to the death of Nerva. Like the two preceding volumes, it follows the familiar format of introductory material, catalogue of coins, indices, and plates. The Introduction covers mints, plated coins, and countermarks on bronze and provides a reign-by-reign discussion of emissions (including a small die study of Vespasian's earliest Roman bronzes), with a chronological table and a bibliography for each reign. Unfortunately, this section is not as comprehensive as those in the prior volumes, amounting to only 20 pages compared with the 61 in the first volume, and lacks the insights and meticulous examinations we had come to expect from this eminent scholar.

The Catalogue of 2,524 coins—all but six illustrated in the plates—will be a great aid to scholars and collectors, facilitating many new studies of metrology, iconography, and die linkage. Importantly, it adds material to already published works. The Civil Wars section, for instance, includes coins that were not available for Peter-Hugo Martin's now standard book on the anonymous issues of A.D. 68. A number of these were acquired after his book was published (e.g., p. 29, Civil

Wars 55 and 56), but many others were in fact already among the Bibliothèque's holdings. Some were in the collection, but could not be found when Martin was doing his research. For example, Martin 7 and 63 cite coins known to Martin from Blacas which are now, respectively, Civil Wars 75-76 and 44; and Martin 3 and 8 cite *BMC* for the coins now, respectively, Civil Wars 71 and 81. In addition, Martin 22 cites *RN* (1865) for the coin now Civil Wars 86; and Martin 14 cites both Blacas and Cohen as well as a cast without source notation in the British Museum for the coin now Civil Wars 85. Martin was apparently unaware of others, mainly from the Ailly collection. For example, Martin nos. 53, 60, 71, 82, 78, and 77 should now include the Ailly coins catalogued as, respectively, Civil Wars 3, 18, 23, 24, 34 and 40, and 37; Martin A.24 should have the Rothschild coin, Civil Wars 65; and Martin 13 should add the Sainte-Geneviève, AF, and Delécluse coins, Civil Wars 82-84.

The volume also has a number of serious problems, however, that should have been resolved before publication. Foremost is the complete neglect of Colin Kraay's important work on Vespasian's early bronzes, "The Bronze Coinage of Vespasian: Classification and Attribution," in *Scripta Nummaria Romana: Essays Presented to Humphrey Sutherland*, eds. R. A. G. Carson and C. M. Kraay (London, 1978), pp. 47-57. This article, a condensation of a die study undertaken in his dissertation, presents Kraay's reassessment of the mint attributions for the early issues of Vespasian. Although there was a 25-year hiatus between the study and its publication, Kraay had hinted at the attribution problems in his review of volume 1 of the Roman imperial coins at Glasgow, in *JRS* 53 (1963), pp. 176-79, where he explained the usefulness of a die study in resolving such dilemmas of attribution and provided examples of groups of coins thought to be from two different mints but whose die links strongly suggest they were struck at only one. Giard's observations, then, on pp. 3 and 12, that die links indicate Tarraco did not issue coins under Vespasian and, on p. 4, that die links show Illyricum bronze should be labeled Rome, parallel those made earlier by Kraay, who also noted this phenomenon with coins previously attributed to Narbo(?) and Lugdunum. Moreover, Giard's die studies on pp. 5 and 10-11 are the counterparts to Kraay's. The difference is that the coins with the undated obverse legend IMP



CAESAR VESPASIANVS AVG PM TR P, classified by Giard on p. 5 as A.D. 70, were thought by Kraay to have been struck in 71. Both scholars noticed the many die links between this group of coins and those with COS III in their obverse legends, clearly indicating they were issued in 71, and drew different conclusions. Kraay thought this argued for the inclusion of the undated group in the 71 material, while Giard decided it was more likely they were struck earlier, in 70. (Giard could have cited support for his position in T. V. Buttrey, *Documentary Evidence for the Chronology of the Flavian Titulature*, Beiträge zur klassischen Philologie 112 [Meisenheim am Glan, 1980], p. 12.) For this reviewer, to have included no discussion of Kraay's pioneering work, or even any citation of it, is a serious oversight, especially surprising in the light of Giard's own praise of Kraay's work in *A Survey of Numismatic Research 1978-1984*, eds. Martin Price, Edward Besly, David MacDowall, Mark Jones, and Andrew Oddy, vol. 1 (London, 1986). There, on p. 240, Giard says, "Kraay s'est notamment illustré dans le classement du monnayage de bronze de Vespasien qui présente, on le sait, de nombreuses difficultés." He then footnotes the article by Kraay on Vespasian's bronzes discussed here, as well as Kraay's 1982 piece, "An Unattributed Flavian Issue," in *Studia Paulo Naster*, which the present volume does cite, in n. 3 on p. 6, in a discussion of Vespasian's mints.

In his reign-by-reign presentation of emissions, Giard, p. 12, refers to Kraay's observation of die sharing between Galba, Vitellius, and Vespasian (footnoting Kraay, *Aes Coinage of Galba*, p. 52 f.). Yet he identifies no such instance in the Catalogue, although there are several. For example, Vitellius 88 reuses the reverse die of Galba 239, Vitellius 90 reuses the reverse die of Galba 240, Vespasian 512 reuses the reverse die of Vitellius 93, Vespasian 529 reuses the Galban reverse die of Kraay 138 (as on *BMC Galba* 80), and Vespasian 591 reuses the reverse die of Galba 256. This last die, depicting three standards, had also been used by Vitellius, as on an uncatalogued coin in the British Museum, ex Vierordt 973 (see Kraay, *Galba*, p. 53, n. 68, pl. 36, 1), although no example exists in Paris. (It appears to be the only reverse die shared by all three emperors). Moreover, the obverse die of Vespasian 554 is used with a Salus Augusta reverse die, as in Glendining, 12 Mar. 1929 (Nordheim), 110 (see die study on p. 11 and Catalogue entry

on p. 151), which turns out to be yet another reused Galban die, Kraay 149 (as on *BMC Galba* 119.) Similarly, the obverse die of Vespasian 472 was also used with a *Securitas P Romani* reverse die, as on an Oxford coin illustrated on pl. 8.14 of Kraay, "Bronze Coinage of Vespasian," which had originally been used by Galba, as here, on p. 61, *Galba* 255.

Giard also states in the Introduction, on p. 12, that Vespasian struck only a few coins in Spain, recognizable by their style and typology. Here he might have cited one more article by Kraay, "Le monnayage en bronze espagnol de Vespasien," *Schweizer Münzblätter* 5 (1954), pp. 5-7.

Another important work dealing in part with Vespasian's bronzes that Giard does not discuss is the article by I. Carradice and M. Cowell, "The Minting of Roman Imperial Bronze Coins for Circulation in the East: Vespasian to Trajan," although it is included in his Bibliography. These two authors, based on the results of their metallurgical analyses of certain "irregular" bronze issues from the time of Vespasian to that of Trajan, found that Rome, or a strictly organized eastern branch mint of Rome, produced issues of Roman-style coins adapted for local circulation in the East. This mint struck the coins that Carradice and Cowell label "Commagene A," and that Giard lists as "Commagene," Vespasian 894-910. Was this article the basis for Giard's suggestion, on p. 6, that the subsequent Commagene coins, Vespasian 911 and 912, could possibly come from the mint of Rome?

The decisions regarding what to include in the Bibliography were very puzzling. For example, the articles by Kraay ("The Coinage of Vindex and Galba" and "Revolt and Subversion"), Mattingly ("The 'Military' Class in the Coinage of the Civil Wars" and "Verginius at Lugdunum?"), and Brunt ("The Revolt of Vindex and the Fall of Nero") cited in n. 2 on p. 3 are all included in the Bibliography under the Civil Wars, but the works by Kraay (his 1982 *Naster* piece mentioned above), Metcalf ("The Flavians in the East"), and Cahn ("An Important Mint in Bithynia") cited in n. 3 on p. 6 are all omitted from the Bibliography under Vespasian. In the Bibliography under General, Giard lists Newton's 1901 book, *The Epigraphical Evidence for the Reigns of Vespasian and Titus*, but not M. McCrum and A. G. Woodhead, *Select Documents of the Principates of the Flavian Emperors*,

Cambridge, 1961. A seventeenth century work by J.-J. Chiflet, *Vindiciae hispanicae*, is included under Titus but not B. L. Damsky's article, "The Throne and Curule Chair Types of Titus and Domitian," *SNR* 74 (1995), pp. 59-70. Under Domitian, Giard omits T. V. Buttrey, "Some Observations on the Titulature of Domitian," *NC* (1990), pp. iv-xvi, although he includes A. Martin's 1987 book on Domitian's titulature. Why list R. Urban's 1971 Munich dissertation on Tacitus's image of Domitian and ignore the more obviously numismatic dissertation of J. Blamberg, *The Public Image Projected by the Roman Emperors (A.D. 69-117) as Reflected in Contemporary Imperial Coinage*, Indiana University, Ph.D., 1976? Other significant omissions include, under General, P. Gallivan, "The *Fasti* for A.D. 70-96," *CQ* 31 (1981), pp. 186-220; under Galba, A. Wallace-Hadrill, "Galba's *Aequitas*," *NC* 141 (1981), pp. 20-39; and under Vespasian, E. Bianco, "Indirizzi programmatici e propagandistici nella monetazione di Vespasiano," *RIN* 70 (1968), pp. 145-224, and T. V. Buttrey, "Vespasian as Moneyer," *NC* 12 (1972), pp. 89-109. Otho has no section in the Bibliography, but W.E. Metcalf, "The Coinage of Otho and Early Imperial Mint Organization," in *Essays in Honour of Robert Carson and Kenneth Jenkins*, eds. M. Price, A. Burnett, and R. Bland, London, 1993, pp. 155-60, should have been cited somewhere.

In the Catalogue, Giard rarely points out when coins were struck with the same die except for the Vespasian coins included in his die study and for coins with consecutive entries (and not reliably, even then). When the same dies are indicated, it is never at the first coin but only at the one(s) following it; the British Museum, by contrast, has notes at both entries, which is enormously helpful. For example, among Vespasian's early bronzes (the material most familiar to me), the obverse die of Vespasian 487 is also found on 502, 523, and 524; the entries for the last three each indicate that the die is the same as 487, but nowhere is it stated that all four are the same. Given the distance between the entries, it would have been useful to have noted this fact with 487, if not in every case. Similarly, the entries for Vespasian 531 and 539 each point out that the obverse die is the same as 515, but neither mentions the other, nor is either mentioned at 515.

Most die links, moreover, are not noted in any way. This deprives the user of the Catalogue of valuable information, such as links

between years, die chains, and the successive use of obverse legends. In addition to the Victoria Augusti reverse used on the Oxford coin (pl. XLI, a) in 70 and reused in 71 on Vespasian 554, there are two other reverse dies linking the years 70 and 71, neither indicated by Giard. The Fortuna Reduci die of Vespasian 465 (A.D. 70) reappears on 486 (A.D. 71), and the SPQR Adsertori Libertatis Public reverse of Vespasian 468 (A.D. 70) was reutilized on 546 and 547 (A.D. 71). Giard's die chart on pp. 10-11 shows well one case of die chaining; many others could have been noted. For example, Vespasian 465-68 use the same obverse die with three different reverse dies, Fortuna Reduci on 465, Pax Augusti on 466-67 (not noted by Giard as having the same reverse die), and SPQR Adsertori Libertatis Public on 468. As was just mentioned, the reverses of 465 and 468 carry over into 71. At that time the reverse die of 468 was combined with a new obverse, 547. This obverse die was in turn used with a Pax Augusti reverse on 517, a Victoria Aug reverse on 557, and a Victoria Augusti reverse on 562. Next, the reverse die of 557 was used with a new obverse, 558, which was then combined with the Iudaea Capta reverse of 493.

One of Kraay's observations, which Giard does not discuss, was that the obverse legends on Vespasian's sestertii of 71 were struck in successive phases. In the first, Kraay's legend A, Vespasian's name appears as Caesar Vespasianus; B reads Caes Vespasian; and C, Caes Vespas. Kraay found many die links between legends A and B, and between B and C, but none between A and C (see Kraay, "Bronze Coinage of Vespasian," pp. 50-51). Giard, following the *British Museum Catalogue*, accords no significance to these variations in the legends. Yet the die links in Paris bear out Kraay's thesis. For example, the obverse die of Vespasian 480 (legend A, Caesar Vespasianus) is the same as that on 520, although unnoted by Giard. Its Pax Aug reverse die is the same as that on 519 (unnoted by Giard), which uses a legend B, Caes Vespasian, obverse die. Similarly, the obverse die of Vespasian 503, 507, and 536, with legend A's Caesar Vespasianus, is linked by the temple of Isis reverse of 536 to the legend B, Caes Vespasian, obverse of 537. Finally, a coin in the British Museum, BMC 538, combines obverse legend B, Caes Vespasian, with a Iudaea Capta reverse which was then struck with the legend C, Caes Vespas, obverse die on 491 and 492 in Paris (unnoted by Giard as being the same). So, there are at least two cases

in Paris where a reverse die connects legends A and B, one case linking B and C, and no example joining legends A and C.

Giard very occasionally mentions that a die is the same as one on a coin outside Paris, though he sometimes does this in the Catalogue entry and other times in the reference notes. For example, Vespasian 544, 546, 550, and 554 have statements in their entries that they have the same dies as coins in the British Museum or various auctions, whereas Vespasian 466, 522, 537, and 647 have these remarks in the reference notes. But such comments are made only a fraction of the time they could have been, and this reviewer could discern no rationale to account for when they are or are not.

Giard does not indicate the many cases where the *BMC* coin cited in the reference notes has the same dies as the Paris specimen. For example, Vespasian 473, 482, 506, 523, and 531 share the same obverse and reverse dies as, respectively, *BMC* 528, 756, 549, 774, and 565, while Vespasian 504, 511, and 518 share the same reverse die as *BMC* 548, 550, and 553.

In a number of cases no example like the Paris coin is indicated to be in the British Museum (*BMC*-), yet such a specimen does exist. Vespasian 489 should read "*BMC* 761 (attribué à Tarragone)"; Vespasian 503 should read "*BMC* 801 (attribué à Lyon)"; Vespasian 522 should read "*BMC* 559"—this is even a Rome coin with the same obverse and reverse dies as the Paris example; Vespasian 539 should read "*BMC* 777 (attribué à Tarragone)"; Vespasian 552 should read "*BMC* 797 (attribué à Narbo?)"; Vespasian 553 should read "*BMC* 586" (this coin has the same obverse and reverse dies as the Paris specimen); Vespasian 554 should read "*BMC* 578"; Vespasian 556 should read "*BMC* 783 (attribué à Tarragone)"; Vespasian 563 should read "*BMC* 584"; and Vespasian 841 should read "*BMC* 828, *RIC* 753(b)."

Furthermore, many reference notes need additional information. Sometimes a citation to Cohen, *BMC*, or *RIC* is omitted, and sometimes a qualifying statement also needs to be included. For example, Vespasian 544 needs to cite Cohen 511; Vespasian 495, 529, and 559 need references to, respectively, *BMC* 540, 560, and 582; and Vespasian 565, 866, 876, 896, 897, and 913 need *RIC* references to 472, 781(b), 779, 806, 804, and 796. In a couple of cases, the omitted

*BMC* reference coin shares a reverse die with Paris, as *Vespasian* 492 and *BMC* 539, and *Vespasian* 526 and *BMC* 526. In one instance, *Vespasian* 711, multiple references are needed to *BMC*- and *RIC* 749. Several entries need references and qualifying statements: to *Vespasian* 476, add “*BMC* 753 (attribué à Tarragone)”; to *Vespasian* 517, add “Cohen 329 (avec CAESAR), *BMC*-” ; and to *Vespasian* 477, add “*BMC* 798 (attribué à Lyon).” In this last example, the two coins use the same obverse and reverse dies. Finally, some entries need qualifying statements appended to their Cohen or *BMC* references. Thus, to *Vespasian* 583, add “(sans armes)” to *BMC* 790; to *Vespasian* 617, add “(oublie la branche)” to Cohen 93; to *Vespasian* 647, add “(avec PONT)” to Cohen 239; to *Vespasian* 815, add “(sans globe, au droit)” to Cohen 195; to *Vespasian* 833, add “(laurée)” to *BMC* 837; and to *Vespasian* 864, add “(radiée)” to *BMC* 860.

It is not clear to this reviewer why some of the coins in the Faux section were so classified. For example, the obverse die of faux 4 is the same as Galba 240 and 241. This coin was accepted by Kraay, who listed it in his ANS monograph as 350b. Faux 18, a sestertius of *Vespasian*, has the same obverse and reverse dies as a coin in Vienna, duly noted by Giard, as well as a coin in Rome, illustrated on pl. 7,1 of Kraay’s article on *Vespasian*’s bronzes. As Giard notes, faux 21, another sestertius of *Vespasian*, uses the same obverse and reverse dies as a Ryan collection coin. Both of these dies also appear on *BMC* 576, and the obverse die on *BMC* 566 (see note to *BMC* 576).

There are a few more things worth mentioning. Page 66 needs the heading MACER. On p. 151, the reverse legends of *Vespasian* 557 and 558 should read VICTORIA AVG, not AVGVSTI; also, these two coins share the same reverse die. On p. 163, PON has been omitted from the obverse legend of *Vespasian* 647; it should read T CAESAR VESPASIAN IMP IIII PON TR POT III COS II. On p. 223, Titus 189 (a colosseum coin) has the same obverse die as Titus 190 and *BMC* 190, and the same reverse die as faux 44. On p. 283, the reverse die of Domitian 324 (a triumphal arch) is the same as the obverse die of 325 (as Giard notes there) as well as the reverse die of 478 (without a note). All three arch coins, plus a specimen in Berlin and a cast in London, are listed as false sestertii in Ian Carradice’s 1979 Congress paper discussing monuments on Domitian’s sestertii. There Carradice points

out that all five coins used the same reverse die, though with varying obverses. The decorative details on the reverse, i.e., the relief panels on the entablature and the round medallions over the arches, distinguish it from genuine dies. Carradice suggests that the forger was inspired by the decorations on the Arch of Constantine. Although this article is listed in the Bibliography for Domitian, Giard has not taken it into account here in the Catalogue. Given the rarity of brockage sestertii, it is curious that these coins are not even labeled "exemplaire douteux," much less relegated to the Faux section where they belong.

In the Civil Wars section of the Catalogue, on p. 25, in a note to \*, the *Bulletin de la Société Française de Numismatique*, Paris, is cited as *BSFN*, but no such abbreviation appears in the list of abbreviations on p. 15. Under Vespasian, p. 194, the notes to entries 892-93 cite "Kraay," which is the abbreviation assigned to *The Aes Coinage of Galba*. The work to which the notes should refer, however, is Kraay's 1982 *Studia Paulo Naster* article, which should be given its own distinctive abbreviation.

Considering just the Vespasianic bronzes, there are many reference notes which contain errors. For example, Cohen and *BMC* numbers are sometimes conflated. Thus, Vespasian 512 should read "Cohen 327, *BMC* 554"—not Cohen 554; Vespasian 516 should read "Cohen 326 (avec CAESAR), *BMC* 555"—not Cohen 555; and Vespasian 834 should read "Cohen 400, *BMC* 846"—not *BMC* 400. There are incorrect references. Vespasian 744 should read "*RIC* 572"—not 571 or 572; Vespasian 835 should read "*RIC* —" instead of *RIC* 757(a); and Vespasian 836 should read "*RIC* " instead of *RIC* 757(b). There are also a few typos. Vespasian 524 should read "Cohen 417"—not 416; Vespasian 723 should read "Cohen 603"—not 303; Vespasian 735 should read "Cohen—" instead of Cohen1-; and Vespasian 906 should read "Seyrig"—not Heyrig. Here may be added a few reference notes which have been run together: Galba 147 and 148; Vitellius 92 and 93; Titus 166 and 167, 215 and 216, and 311 and 312. On plate xlvii 536 and 537 look like the same reverse image was pasted up twice, and 544 should really be labeled "a," to correspond to the Vienna coin (D3, R4) listed in the die study on p. 11.

It is a wonderful improvement over the *British Museum Catalogue* to have the plate images identified by their catalogue entry number

rather than assigning them consecutive numbers on each plate. Another useful feature, since so many older studies cite the Paris coins by AF, or Armand-Valton, numbers, would have been a concordance of those numbers and the new catalogue numbers.

Despite its faults, this book will become a standard reference work for students, laymen, and professionals. (Indeed, it is already being cited in auction catalogues.) There is much to be happy about here, not the least of which is being able to see at a glance the rich holdings of Flavian material in the Bibliothèque Nationale, but it is a pity that Giard's final volume in this series falls so short of his prior two endeavors.

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*Repertorium zur neuzeitlichen Münzprägung Europas*, vol. 2, *Heiliges Römisches Reich Deutscher Nation und Nachfolgestaaten—der Bayerische Reichskreis*. Vienna: Oesterreichische Forschungsgesellschaft für Numismatik, Institut für Numismatik, Universität Wien, 1996. 148 pp., illus. ISBN 3-9500530-1-8. No price stated.

"Repertorium" is a fancy word for catalogue, obsolete in English, and nearly obsolete in German. The usage I know, the catalogue of an archive, is rapidly being replaced by "Findbuch." This is the first volume to appear, although the second volume in the series, of an extremely ambitious project to catalogue the modern coinage of Europe in 19 volumes. The project will catalogue all coins by denomination and date, although not by type. For the purpose of these volumes the modern period begins towards the end of the fifteenth century, with the introduction of large size silver coins such as the thaler and the replacement of Lombard letters by Roman letters in the inscriptions. The project splits the modern period into an early (*Neuzeit*) and a late (*Moderne*) period. The transition from early modern to late modern is usually the Napoleonic money reforms, a good choice, but countries which were not conquered by Napoleon pose a problem. The end of the *Neuzeit* in Russia is defined as the revolution of October/November 1917, which has the perverse result



that the Bavarian family thaler of 1828 falls into the later modern period, yet its subsequent Russian imitator, the family rouble of 1835-36, is in the earlier modern period.

The definition of Europe is also a problem. The editors have chosen not to include Islamic coins. This implies that Islamic culture is not "European"—but Islamic culture and its coinage were dominant in many sections of Europe for centuries. One of the first gold coins issued by a British monarch was almost entirely Islamic in design, except for the words OFFA REX. I am not wholly comfortable with the editors' assumption that European culture is identical with Christian culture.

The core of the project is the first eight volumes, which are devoted to the coinage of the Holy Roman Empire, arranged by circles of the Empire. The circles of the empire were responsible for coinage regulations, so there is much to be said for this arrangement; but it is not as easy for the modern user as an alphabetical arrangement, which is what most auction houses use. The system is not applied consistently. Habsburg mints will be united in one volume (I/1), and at the Berlin conference I heard the editors say that they did not plan to split up Brandenburg-Prussia. Other states are not so lucky. Elector Charles Theodore's issues for the Palatinate will be found in two separate volumes, depending on whether he struck coins at Amberg (in the Bavarian Circle) or Mannheim (in the Electoral Rhenish Circle). His coins for Jülich-Berg fall into a third volume, the Lower Rhenish-Westphalian Circle. Because Habsburg mints will be united in one volume, one of the most important mints in the Swabian circle, Günzburg in the Burgau, will not be found in that volume.

The first volume to be published is volume 2, devoted to the Bavarian Circle. These coins are already well catalogued and one of the editors, Wolfgang Hahn, has published in this area. The catalogues of Beierlein for Bavaria, Beckenbauer for Ratisbon, and Bernhart-Roll and Probszt for Salzburg, are excellent. The Upper Palatinate poses a problem. Alfred Noss never completed his catalogue of the main, electoral, line. It turns out that few of the Palatine Electors actually coined in the Upper Palatinate, so the electoral Palatine problem can be postponed to volume five. The editors have, however, used Noss's

Palatine manuscript in the Staatliche Münzsammlung München, so this *Repertorium* presents some hitherto unpublished research.

The core of the book is the coinage tables. The tables derive from the cataloguing style of the *Oesterreichische Münzprägung* of Miller zu Aichholz. The tables in the *Repertorium* arrange the coinage of each issuing authority by year (Y axis) and by denomination (X axis, moving from left to right in descending order). A dark black line separates the three metals of gold, silver, and copper. It is interesting when this line moves dramatically to the left, as in 1766, when Elector Maximilian Joseph of Bavaria stopped striking billon pfennigs and introduced a 2 pfennig piece in copper. The tables tell the reader which denominations were struck in which years. They do not tell the reader about changes of type, nor if two types were struck in the same year. This practice, which stems from the theory of the Viennese school of numismatics, would have to be drastically altered if the *Repertorium* were to be extended to the Americas—it would be nonsensical to reduce the New England, Willow Tree, Oak Tree, and Pine Tree shillings to one cell just because they all bear the date 1652. The *Repertorium* does not provide the reader with weights, fineness, or mintages—which are available in many of the most widely used catalogues, such as Gadoury or Krause-Mishler. I know from studying Swedish coinage of the seventeenth century that a change of type often indicated a debasement. If types, weights, fineness, and mintages were listed in the *Repertorium*, one would be able to follow competitive debasements on a Europe-wide basis. The mintages could be listed in the cells of the coin tables; the cells are currently occupied by the numbering system, but that could be put on the X and Y axes.

The *Repertorium* is arranged according to the “issue theory” (*Emissionsbegriff*) of the Viennese numismatic school. As I understand it, the issue theory holds that the identifying marks on coins allow us to separate these coins into separate issues—a gold stater of the Bosporan Kingdom under Paerisades, issued at the mint of Panticapaeum by the magistrate MK, or a cent of the United States of America, issued at the mint of Philadelphia in the year 1798. But when we perform die and die state studies, we discover that the dates on the coins do not mean what they say. We know that cents of 1798 were struck in 1799, after cents dated 1799; that cents of 1802 were struck in 1803, after

cents dated 1803; that half dollars dated 1828 were struck in 1829, after half dollars dated 1828; and these examples could be multiplied indefinitely. If a similar table were to be constructed for U.S. copper coins, it would show that half cents and cents were both struck in 1804. What it would not show was that a vast number of half cents were struck, and very few cents, which is the point—the mint was so busy making half cents, it made very few cents. The patterns of mint production which the authors are looking for will only begin to emerge if they list mintages. We know from other sources (e.g. Moser and Tursky's excellent history of the mint of Hall in the Tyrol) that the 20 kreuzer became the workhorse coin of the late eighteenth century, and the tables in the *Repertorium* do show this. Unfortunately the big mintages of the workhorse coins are indistinguishable in the tables from small mintages of coins issued each year as a statement of sovereignty or for Christmas gifts.

The photographs, which are based on the cards in the Vienna photo file, are more than acceptable. Some of the book's best features are the supplementary information such as maps, genealogical charts, heraldic diagrams, and extensive bibliographies, including auctions, although the bibliography for the Bishopric of Regensburg includes the Emmerig-Kozinowski catalogue of 1997, which is hard to reconcile with the copyright date of 1996 for the *Repertorium*. One omission is the auction of the Kraaz collection, containing coins of the *Kipper- und Wipper-Zeit*. The introduction is printed in German and English, but the English translation is very poor.

The *Repertorium* is used to introduce a standard numbering system for all modern European coins, so that 1B.1.8-1.7/16 indicates a thaler of Elector Max Emanuel of 1694. The numbering system indicates 1 (Holy Roman Empire) B (Bavarian Circle) 1 (Electorate of Bavaria) 8 (Max Emanuel) 1 (Munich mint) 7 (thaler) 16 (sixteenth year of the reign of Max Emanuel, viz. 1694). I would be surprised if 1B.1.8-1.7/16 replaces "Dav.6099."

Photography has already been done for volumes I/1 (House of Habsburg) and XVIII (southeast Europe), so another two volumes are in the pipeline. The large, abstract schemata so beloved in *Mittleuropa* may not appeal to pragmatic Anglo-American tastes; but if the reader can

put up with the often heavy-handed systematization, he will find much useful information.

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Raymond Weiller, *La Circulation Monétaire et les Trouvailles Numismatiques du Moyen Age et des Temps Modernes au Pays de Luxembourg*, vol. 3 (CMPL 3). Luxembourg: Ministère de la Culture, 1996. 373 pp., illus., 32 pl. No price stated.

The first volume of *CMPL* was published in 1975, the second followed in 1989, and the third in 1996. The information is in the raw form of archival documents, hoards, and archaeological excavations. This volume contains enough material for half a dozen articles on the most varied topics ranging from the use of cloth seals in Luxembourg and the Low Countries, to the religious medal as evidence of pilgrimages, the religious medal and cholera epidemics, the circulation of Judenpfennigs, coin weights, and Nuremberg counters, prices during the wars of Louis XIV, coinage in Luxembourg during the French revolutionary wars, and monetary policy in Nazi occupied Europe. The book assumes its audience to be those interested in the monetary history of Luxembourg in the medieval and modern periods; but most scholars will consult this book not because they are writing a monetary history of Luxembourg, but because they are studying one particular epoch in European history and need comparative evidence from Luxembourg. The danger in publishing research in this form is that the historian of the Third Reich will pick it up, see photographs of all those gros tournois, and return it to the shelf. Yet Weiller publishes here many interesting documents about Nazi monetary policy.

The introduction includes commentary by Weiller on diverse subjects including monetary circulation in Luxembourg in light of K. Petry's discussion of monetary circulation in Upper Lotharingia in the sixth through the twelfth centuries, the use of coins as jewelry, grave finds, contemporary counterfeits (including counterfeit French écus), coin weights, counters, pilgrimage medals, other religious medals, and cloth seals. Attached to this introduction are appendices which inventory the pilgrimage medals, coin weights, and cloth seals listed in

CMPL 1-3, so this book provides us with an overview of the use of these three types of numismatic items in the Grand Duchy. The author includes a Parys Mine token from Anglesey in his list of counters (Annex 4, 67), but I think it is a monetary token, not a counter. Weiller adds an interesting map showing where the pilgrimage medals found in the Grand Duchy originated. It seems that no pilgrimages were made to Santiago de Compostela, while the furthest southwest that Luxembourg pilgrims traveled was Lourdes.

The documents, in Annex 7, which Weiller reproduces, are very assorted. One series discusses the difficulties the authorities encountered in getting Luxembourg merchants to accept the sols struck during the siege of Luxembourg in 1794-95.

Twenty pages of documents from the Bundesarchiv in Koblenz discuss monetary policy during the Nazi occupation. Luxembourg was incorporated into the Reich in June 1940. The Reichsmark was introduced at the rate of 10 Luxembourg francs equal 1 Reichsmark. The Banque de France had bought over eight million Luxembourg francs from refugees and wished to exchange these for Reichsmarks. Yet the Germans refused to accept these Luxembourg francs. On first reading it seems as if the Reichsbank is following a very ruthless occupation policy, trying to extract as much as they can from occupied France; and this is probably how it appeared to contemporaries. On second reading the Reichsbank does not appear aggressive and arrogant, but frightened. The Reichsbank officials knew how little was backing the Reichsmark—Mefo bills and similarly dubious obligations—and the more Reichsmarks they issued, the nearer the final collapse approached. By incorporating Luxembourg into the Reich and exchanging Luxembourg francs for Reichsmarks the money supply was expanded. If the Reichsbank could put a small brake on the inflation by refusing to accept the eight million Luxembourg francs in the vaults of the Banque de France, so much the better. Weiller produces no documents that tell how the story ended, but let us hope for the sake of the Banque de France that it kept its Luxembourg francs to the end of the war, when Luxembourg currency proved to be stronger than the Reichsmark. On the evidence of these documents, the officials of the Banque de France believed that Germany would win the war.

A final annex lists official prices for meat and bread in Luxembourg under French occupation during the period of the Réunions and the War of the League of Augsburg (1684-98).

The hoards published include a hoard of French gros tournois, deposited in or after 1329 (A1); a hoard of briquets and other coins from the Low Countries, deposited in or after 1479 (A2); a hoard chiefly of silver crowns, deposited in or after 1634 (A3); and a hoard mostly containing liards, with the latest date 1719 (A7). A9 is a peculiar hoard as its latest dated coin is 1827, but its earliest coin is an albus (Petermännchen) of Trier of 1625. This long period of circulation for the Petermännchen and the liards is not impossible, but it is a peculiar assemblage. The hoard is composed of low denomination coins, each of which is present in only one or occasionally two examples. This may not be a true savings hoard, but someone's coin collection, made up of the low denomination coins encountered in circulation in Luxembourg in the early nineteenth century. What makes this hoard particularly important is the presence of four Judenpfennigs, evasive imitations of coins of the day. These coins are traditionally called Frankfurt Judenpfennigs, because although the coins were not necessarily struck at Frankfurt nor made by the Jews, they circulated there, and the Jews were convenient scapegoats for their manufacture. This hoard indicates what coins circulated along with the Judenpfennigs.

A group of religious medals was discovered while excavating in the garden of an old presbytery (C2c). The terminus post quem of 1892 is provided by a pilgrimage medal from Kevelaer. Of particular interest to us is item 6, a religious medal showing Saint Hubertus and Saint Roch, reading on the obverse ST HUBERT PRIEZ POUR NOUS, on the reverse SAINT ROCH PRÉSERVEZ NOUS DU CHOLÉRA. Because cholera epidemics happen in discreet time periods we can date this medal to the 1892 cholera epidemic. At the beginning of June 1892 the epidemic traveled from Persia to Askhabad in Russian Transcaspia, then to the harbors of Baku and Astrakhan on the Caspian Sea. The authorities tried to keep it secret, but by the third week of June those who make it their business to know such things—the speculators on the grain futures market in Odessa and the stockbrokers in Saint Petersburg—knew and began selling heavily. The cholera epidemic spread rapidly throughout Russia, and then to

Germany; the terrible epidemic in Hamburg is exhaustively covered in Richard J. Evans, *Death in Hamburg. Society and Politics in the Cholera Years 1830-1910* (Oxford, 1987). In the summer of 1892, the local manufacturers of religious medals saw a market in fear of the epidemic, and made up a special medal. As Weiller points out, invoking Saint Roch against plague is a specific Luxembourg variant in saints worship; usually Saint Charles Borromeo is invoked against plague. Saint Hubertus appears on the medal because he is particularly good with animals, who are often carriers of plagues.

Another excavation turned up an Argentine 2 centavo of 1890, the only American coin in this volume (C2b, 11). This find is interesting in the context of what we know about the circulation of Argentine 1890 centavos in Europe, discussed in the article by A. J. Cunietti-Ferrando, "La Circulación de Cobres Argentinos en Europa," *Cuadernos de Numismática y Ciencias Historicas* 22, 95 (Buenos Aires, 1995) p. 21-25. A non-numismatic find (p. 215) is a beautiful Renaissance knife.

The author has an excellent command of the literature in many different languages and the bibliographic references are very useful. The author reads so widely that he has even corrected the three errors mentioned in my AJN review of CMPL 2. This is very flattering for the reviewer.

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Trevor H. Stephenson, *Peruvian Trams and Railways: An Illustrated History*. London: Minerva Press, 1995. 199 pp., illus. ISBN 1-85863-404-0, £11.99.

This book belongs to the category of railroad literature, but because of the numerous medallions issued for the opening of Peruvian railroad lines, it has a strong numismatic component. Foreign investment, and particularly British investment, in Latin America has interested scholars for decades, and the best work available is Colin M. Lewis, *British Railways in Argentina, 1857-1914: A Case Study of Foreign Investment* (London, 1983).

The Stephenson book is written for a popular rather than a scholarly audience. It is an assemblage of material about Peruvian trams and

railroads, including postcard views, photographs of locomotives and old maps, as well as the medallions. The author worked for the Peruvian Railways from 1963 until 1990. He wrote the book to set down a brief history of Peru's railroads before all knowledge of them was forgotten. Some of the accounts rely on personal knowledge and interviews with railroad employees. The book is a primary source in its own right.

Stephenson reports that the mule-drawn tramways of Trujillo started about 1890, connected the railroad station of the Trujillo-Salaverry line with the Plaza de Armas, and then ceased about 1930. A postcard shows tram tracks going down the Giron de Bolivar, so trams certainly ran in Trujillo at some point. Some of the best evidence for the existence of these railroads is the medallions issued at their inauguration. The coin outlasts not only the tomb, but also the Beyer Peacock locomotive.

My favorite story concerned the Tablones-Huallanca Railroad. Between 1920 and 1930, the engineer was given nearly 10 million sols to build the tracks, bridges, and tunnels. In July 1926 the engineer said that only 4.49 kilometers remained to be built, and he needed more money to build bridges and plaster the roofs of the tunnels. After the revolution of August 1930 the contract was cancelled. When the government went to take over the line, they found that not a single meter of track had been built—the engineer had embezzled every last centavo.

The book includes short accounts of the history of each railroad and tramway in Peru and also a chapter on the Lima Metro, a pet project of President Alan Garcia. A final section provides a very favorable biography of Henry Meiggs.

The sub-category of numismatic literature on numismatic objects issued by or connected with railroads is larger than one might think. The standard catalogue remains that of Moyaux, but, for example, on the New York City subway there are the seminal articles by Cuhaj; the Vienna coin cabinet published an exhibit catalogue, *150 Jahre Eisenbahn in Oesterreich* (Vienna, 1987); there is also a German publication by Döry and Kubinszky, *Die Eisenbahn auf der Medaille in Mitteleuropa von den Anfängen bis 1945*. Stephenson wrote a numismatic column for the *Lima Times* for 15 years, so he straddles the two worlds.



Stephenson's book provides a catalogue of the medallions issued by Peruvian railroads and tramways. Medallions were distributed when an important section of a railroad was opened. Stephenson provides a numbered checklist of these medallions in his chapter seven, so the collector of Peruvian medals will be able to catalogue his holdings by Stephenson numbers. His list includes 44 medallions (32 issued between 1868 and 1909), many of which were issued in two or three different metals. Stephenson sometimes lists different metals in his captions and in the checklist. Stephenson 27 appears only in silver in the checklist, but in silver and copper in the caption to figure 8; Stephenson 26 appears in gold, silver, and copper in the checklist, but only in silver in the caption to Figure 9. There is also some confusion as to dates. Stephenson 44 has an issue date of 1979 in the checklist, but 1978 in the caption to figure 76. Stephenson 10 has the correct date of 1871 in the checklist, but the incorrect date of 1868 in the caption to figure 84. One variety, Stephenson 24, may be identical with Stephenson 21 but unfortunately there is no illustration which corresponds to Stephenson 24. Stephenson often does not give the manufacturer, nor does he say explain why there are so many Peruvian railroad medallions. Stephenson's checklist gives the name of the railroad, the date issued, and the metals in which the medallion was struck, but it is very difficult to find out the difference between Stephenson 14, which is "Lima Tramways," and Stephenson 15, which is "Lima Tramways (variety)." In the case of the Lima Tramways medallion, Figure 10 corresponds to Stephenson 14, and Figure 12 to Stephenson 15. The author chose to illustrate the medallions in the sections discussing each railroad, rather than in a catalogue at the end, but it makes it difficult to use the checklist. It would be helpful if cross-references to the figures were included in the checklist. I include a concordance below.

Stephenson No.	Figure
1	83
2	115
3	81
4	86
5	85
6	77
7	no figure

8	117
9	116
10	84
11	92
12	141
13	no figure
14	10
15	12
16	105
17	no figure
18	20
19	22
20	103
21	102
22	133
23	101
24	no figure (identical with 21?)
25	127
26	9
27	8
28	107
29	75
30	43
31	74
32	90
33	46
34	23
35	13
36	48
37	88
38	47
39	no figure
40	49
41	28
42	50
43	38
44	76

In addition to the medallions, Stephenson includes photographs of the paper money issued by Henry Meiggs. He does not provide a checklist for these, but the pieces are adequately listed in the Pick catalogues of paper money.

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# PLATES



Plate 1



Livia Hoard

Plate 2



R2



R3



R4



R5



R6



R7



R8

Livia Hoard



R9



R10



R11



R12



R13



R14

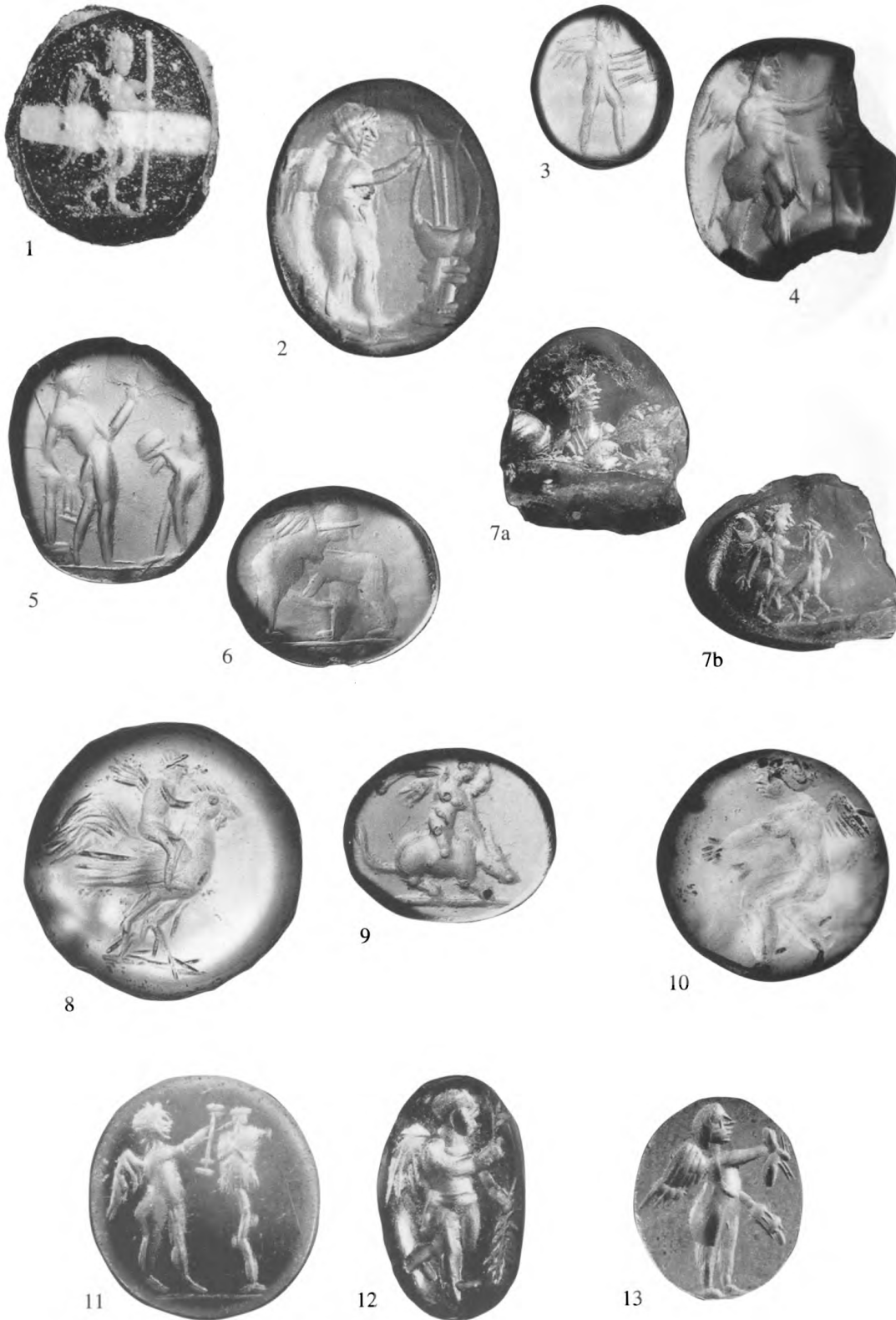


R15

Livia Hoard



Plate 4



Intaglios with Eros



14



15



16



17



18



19



20



21



22



23



24



25

Intaglios with Eros

Plate 6



A



B



1



2



3



3



5

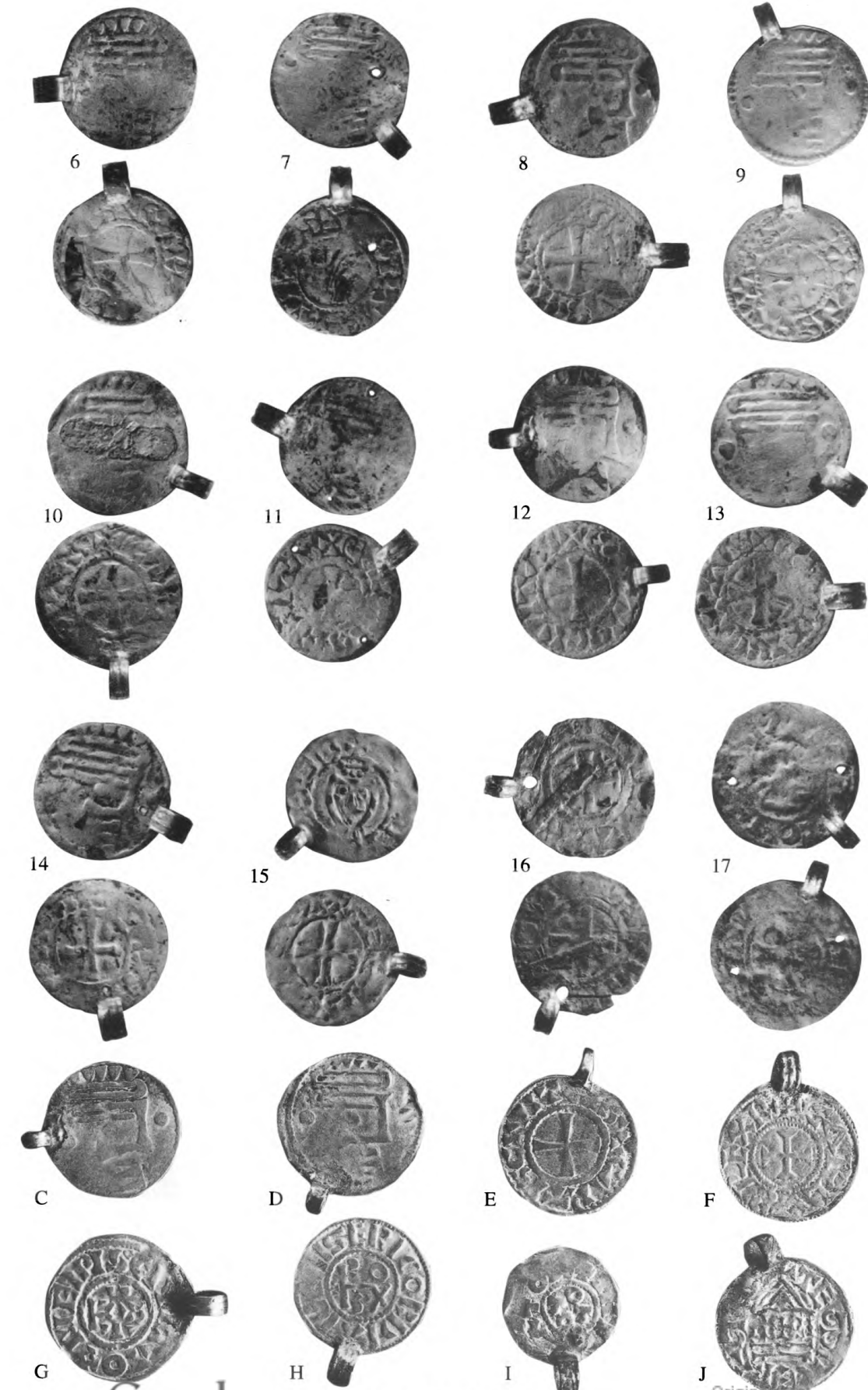


4



Fatimid Amulet Box

Plate 7



Digitized by Google

Fatimid Amulet Box

Original from  
INDIANA UNIVERSITY

# Plate 8







1



2



3



4



5

Gold and Unparted Bars











3 0000 066 033 857

